Bringing Visibility to the Resource Pressures on S'ólh Téméxw (Stó:lō Traditional Territory): An Analysis of Referrals from 2008

by

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Abstract

As the Aboriginal people of the Lower Fraser River watershed in southwestern British Columbia, the Stó:lō people hold Aboriginal title to their traditional territory and the Aboriginal right of self-government. Inherent to both these rights is the right to make decisions on how the land and resources of their traditional territory are used. This research project contributes to the Stó:lō people's ongoing efforts to assert their Aboriginal rights through cultural resource management. Stó:lō Nation receive referrals from the government detailing applications by proponents to carry out activities on their traditional territory. By categorizing these referrals and adding them to a Geographic Information System, this research project creates a landscape-level picture of the resource pressures on the Stó:lō people's traditional territory and the threats these pressures pose to Stó:lō cultural resources. The resulting aggregate picture assists the Stó:lō people in decision-making and strategic planning around referrals management and culture resource protection.

Keywords: Stó:lō; referrals; cultural resource management; Geographic Information System; S'ólh Téméxw Use Plan; self-government

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List of Acronyms

AR&T   Aboriginal Rights and Title

ATV   All-Terrain Vehicle

CAIC   Chilliwack Area Indian Council

EFDC   East Fraser District Council

FCRSA   Forest Consultation and Revenue Sharing Agreement

FSP   Forest Stewardship Plan

FVRD   Fraser Valley Regional District

GIS   Geographic Information System

GVRD   Greater Vancouver Regional District

RAC   Referral Advisory Committee

SEA   Strategic Engagement Agreement

SFU   Simon Fraser University

SNCC   Stó:lō Nation Chiefs Council

STRA   S'ólh Téméxw Referrals Alliance

STUP   S'ólh Téméxw Use Plan

SRRMC   Stó:lō Research and Resource Management Centre

SXTA   Stó:lō Xwexwilmexw Treaty Association

Chapter 1.

The Stó:lō People's Right of Self-Government

Pre-contact Aboriginal peoples self-organized into distinct nations with their own languages, culture, laws, and territories (Cassidy, 1991). During this time, each cultural group operated as its own self-governing collective that held rights to the land and resources of its territory (Borrows, 2005). The arrival of the Europeans spelled the end of these traditional governance systems as the colonial policies that were implemented effectively eroded Aboriginal authority (Christie, 2007). Regardless of the claims of sovereignty made by colonial powers, and the resulting marginalization of Aboriginal people, Aboriginal rights continued to exist and came to be recognized and enshrined under Section 35 of *The Constitution Act* of 1982 (Muldoon, Lucas, Gibson & Pickfield, 2009). While constitutionally protected, the Aboriginal right of self-government is not defined in the Canadian Constitution and, therefore, it remains a nebulous concept for the governments of Canada, which struggle to understand how this and other Aboriginal rights may affect existing Canadian political-legal landscapes (Mainville, 2001; Christie, 2007).

The Stó:lō people are the Aboriginal people of the Lower Fraser River watershed in southwestern British Columbia. The Stó:lō people assert that their Aboriginal right of self-government includes the ability to control how the land and resources of their traditional territory are used (Carlson, 1996b). Over the past one hundred and fifty years the Stó:lō people have experienced countless government-sanctioned infringements of this right. As far back as 1858, the colonial government granted thousands of American gold miners individual 25-square-foot claims to valuable Stó:lō riverine resources along the Fraser River and cleared trees to make way for mining towns (Carlson, 1996a, p. 62). The years that followed the Fraser River Gold Rush saw an influx of British farming families into the Fraser Valley, each of whom were given the option by the colonial government of pre-empting 160 acres of productive Stó:lō land (Carlson, 2001b, p. 71).

As new waves of immigrants arrived in Stó:lō traditional territory, the governments of British Columbia and Canada continued to misappropriate the Stó:lō people's land and resources for the benefit of the settler society. Land was set aside and cleared for road and rail networks, many of which were established alongside or within existing Stó:lō village sites (Thom & Cameron, 1996). Sumas Lake, which once supported many fish, plants, and animals used by the Stó:lō people, was drained to create additional fertile farmland for the agrarian settler community (Woods, 2001). The clear-cutting practices employed by the burgeoning forestry industry removed old-growth stands and understories previously used by the Stó:lō people and left their lands riddled with erosion-inducing forest service roads (Duffield, 2001a). Even in their creation of parks and protected areas, the governments of British Columbia and Canada carved out areas from the Stó:lō people's traditional territory and prohibited hunting and gathering in them, activities that are part of the Stó:lō people's cultural practices (Duffield, 2001b). All of these government-sanctioned activities involved the use and management of the Stó:lō people's land and resources, yet they took place without the consent of Stó:lō people or governments.

In 1997 changes to the Canadian legal landscape brought about by case law made it illegal for Canadian governments to continue to infringe on Aboriginal rights in this way (Newman, 2009). Before they sanction an activity, governments must now consult with Aboriginal groups to ensure that the proposed activity will not infringe on their Aboriginal rights (BCTC, 1999). Consultation takes the form of referrals, sent by governments to Aboriginal groups, which describe the nature of the proposed activities and request input on potential infringements of their Aboriginal rights (BC MARR, 2010). This referral process is intended to provide Aboriginal people with a voice in decisions pertaining to the use of the land and resources of their traditional territories.

Stó:lō leaders have recognized that the process of becoming a self-governing people again is a gradual one and they must continue to explore the different avenues through which this can become a reality (Carlson, 1996b). Over the past two decades, the Stó:lō people and their leaders have become actively involved in the field of cultural resource management as a means of asserting their Aboriginal right of self-government. Stó:lō Nation, a political and service-delivery organization established in 1995 to serve the interests of the Stó:lō people, has developed policies and guides describing the

Stó:lō people's culture, identifying heritage sites throughout their traditional territory, and establishing protocols for the protection of these cultural resources (Schaepe, 2007).

Stó:lō Nation chose to participate in the referral process as another way to affect how the land and resources of the Stó:lō people's traditional territory are being used. Stó:lō Nation has been receiving and processing referrals since the late 1990s. Informed by their previous cultural resource management work, Stó:lō Nation recognized that referrals contain a wealth of information that could be mined in such a way as to produce a landscape-level understanding of the resource pressures on their traditional territory and the threats these pressures pose to Stó:lō cultural resources.

1.1. Research Project: Goals and Objectives

The Stó:lō Research and Resource Management Centre (SRRMC) is a department of Stó:lō Nation that conducts research and provides services in the fields of Aboriginal rights, cultural resource and environmental management, and archaeology. Discussions between Dr. David Schaepe, director of the SRRMC, and Dr. John Welch, my academic advisor at Simon Fraser University (SFU), led to the suggestion that a Resource and Environmental Management graduate student from SFU could assist Stó:lō Nation in their exploration of the resource pressures represented by referrals. By this point in my studies, I was developing a solid foundation in the social, environmental, and economic dimensions of natural resource management. I had also chosen to major in planning, with a focus on Aboriginal land use planning. Schaepe invited me to join the SRRMC as a graduate student researcher to analyze the resource pressures represented by the referrals received by Stó:lō Nation. In the summer of 2010 I started my research project with the SRRMC, under the direction of Schaepe and Welch.

The goal of my research project was to analyze the referrals received by Stó:lō Nation to build a landscape-level picture of the resource pressures on the Stó:lō people's traditional territory. The three objectives underlying this goal were to identify:

1. Which activity sectors are generating the resource pressures;
2. Who is proposing to carry out the activities; and
3. Where on Stó:lō traditional territory the activities are being proposed.

1.2. Report Structure

In Chapter 2 I discuss the historical, political, and legal components of the Aboriginal Land Question in British Columbia. I examine the Crown's duty to consult and the referral process established by the government of British Columbia in response to this duty.

In Chapter 3 I provide a brief history of the Stó:lō people and provide an overview of their assertion of their Aboriginal right of self-government though their cultural resource management initiatives. I describe the evolution of Stó:lō policies and plans that act as both inventories of Stó:lō cultural resources and guides to the culturally-appropriate treatment of these resources. I discuss the experience of Stó:lō Nation with referrals management.

In Chapter 4 I explain the methods I used in my research project. I present my research results in Chapter 5. In Chapter 6 I discuss what I learned about the resource pressures on the Stó:lō people's traditional territory and the utility of this information.

Chapter 2.

Aboriginal Title and The Duty to Consult

2.1. Recognition of Aboriginal Title by the Crown

Aboriginal rights are rights held by the Aboriginal peoples of Canada. These rights were not bestowed on Aboriginal peoples by some colonial power, but rather are an inherent set of rights based on Aboriginal peoples' prior occupation of Canada (Mainville, 2001). Aboriginal title is a particular type of Aboriginal right; it is a right to the land itself, a property interest held by Aboriginal peoples that includes the right to make decisions about how the land is used (Christie, 2007). This aspect of Aboriginal title, the right to make decisions about how the land is used, is inextricably linked to the Stó:lō people's explanation of their Aboriginal right of self-government, as discussed in Chapter 1. This connection between Aboriginal title and the Aboriginal right of self-government emphasizes the inseparability of the land, culture, and government of traditional Aboriginal societies (Taiaiake, 1999).

The Crown formally recognized existing Aboriginal title in Canada through the Royal Proclamation of 1763, which states that all lands are Aboriginal until ceded by treaty or purchased by the Crown (Borrows, 1998). By explicitly recognizing continuing Aboriginal title, the Royal Proclamation implicitly sanctions the continuity of self-government (Tennant, 1990). The Royal Proclamation served as a foundational piece of the historic treaty-making process in Canada (MacKinnon, 2013). Between 1701 and 1923, treaties were signed between the Crown and Aboriginal peoples across Canada, determining the content and extent of Aboriginal rights and title (AANDC, 2014a). The treaty negotiating process was never completed in British Columbia, leaving the issue of Aboriginal title unresolved across most of the province.

2.2. Denial of Aboriginal Title by British Columbia

Governor James Douglas was the individual responsible for the negotiation of treaties with the Aboriginal peoples of present-day British Columbia. While Douglas succeeded in establishing fourteen treaties with Aboriginal groups on the Colony of Vancouver Island, he did not pursue treaty negotiations with Aboriginal groups on the mainland Colony of British Columbia (McCabe, 2010). Correspondence between Douglas and the colonial office in London, England suggests that a lack of financial resources available to the Colony of British Columbia left Douglas politically willing but financially incapable of negotiating treaties on the mainland (Tennant, 1990). Accounts from Aboriginal groups on the mainland paint a similar picture with many Aboriginal leaders recounting Douglas' explicit recognition of their Aboriginal title, his promise to negotiate treaties, and the expectation that these negotiations would take place as soon as the Colony of British Columbia obtained the necessary funds (Carlson, 1996a).

In the absence of treaties, Douglas set about "protecting" Aboriginal peoples from the settler society by restricting them to tracts of land reserved for their sole use (Tennant, 1990). Although Douglas often requested and received guidance from Aboriginal groups on the location and size of these reserves, the lands set aside for the exclusive use of Aboriginal peoples were minute in comparison to the extent of their traditional territories (Carlson, 2001b). The retirement of Douglas in 1864 made way for his successor, Joseph Trutch, a man who vehemently and openly denied the possibility of Aboriginal title (Tennant, 1990). Trutch reduced the size of the "Douglas" reserves, in some cases by up to ninety-two percent, leaving Aboriginal groups confined to tiny tracts of land while the rest of their traditional territories was opened up for use by the agrarian settler society (Carlson, 2001b, p. 94).

During this time, and in the decades to follow, the governments of British Columbia and Canada introduced numerous assimilation policies that further negatively impacted Aboriginal peoples' sense of identity and connection to their traditional territories. *The Civilization Act* of 1857 set out impracticable criteria that Aboriginal people had to meet in order to be considered "civilized" and worthy of the same rights as British citizens and the *Gradual Enfranchisement Act* of 1869 gave government agents the authority to replace traditional Aboriginal leaders with either elected councils or

councils appointed by the agent (Carlson, 1996a). In 1876 these acts were consolidated as the *Indian Act*. In 1884 the *Indian Act* was amended to outlaw the potlatch, a mechanism of traditional governance that had been used for generations by Aboriginal societies to establish political rank and authority (Tennant, 1990). In 1929 the *Indian Act* was amended again, prohibiting Aboriginal people from taking legal action against the federal government. This amendment ensured that Aboriginal people in British Columbia could not request the courts to recognize their Aboriginal title as a legal right. This legal representation ban remained in place until 1951 (Carlson, 1996b).

2.3. Aboriginal Title in the Courts

The first legal case in British Columbia to deal with Aboriginal title was the 1973 *Calder* case, brought by the Nisga'a Tribal Council who wanted the courts to declare that their Aboriginal title to their traditional lands had never been extinguished (Mainville, 2001). While the Supreme Court of Canada held that Aboriginal title existed prior to the establishment of the Colony of British Columbia in 1858, it was a hung jury on the issue of whether Aboriginal title continued to exist. The tie in jury votes allowed the ruling of the lower courts to hold; namely that Aboriginal title had been implicitly extinguished (Tennant, 1990). The *Calder* case was a victory for the Aboriginal peoples of British Columbia as it ultimately invalidated Trutch and the colonial government's outright denial of Aboriginal title by establishing Aboriginal title as a pre-existing legal right.

In the 1997 *Delgamuukw* case the Gitxsan Nation and the Wet'suwet'en Nation claimed ownership of and jurisdiction over their traditional territories, an area totaling 58,000 square kilometers of northwestern British Columbia (BCTC, 1999, p. 2). In this case the Supreme Court of Canada defined Aboriginal title as a unique collective right to the land that gives Aboriginal people exclusive use and occupation of the land and the minerals beneath it for a variety of purposes, either traditional or non-traditional, so long as the purposes are not at odds with their connection to the land (Kennedy, 2009). In addition to laying out the nature and content of Aboriginal title, the court also described how it can be proved and when it may be infringed upon (Mainville, 2001). The court ruled that, in order to be considered justifiable, an infringement of Aboriginal title should meet the criteria established in "the Sparrow test": the Crown must act in accordance

with a valid legislative objective; second to conservation measures, priority must be given to the Aboriginal groups; the infringement must be as minimal as possible; fair compensation must be provided to the Aboriginal groups; and the Crown must consult with the Aboriginal groups (Brackstone, 2002, p. 7).

Unlike the *Calder* case, in the *Delgamuukw* case the court ruled that there had been no blanket extinguishment of Aboriginal title by the Colony of British Columbia (BCTC, 1999). The court emphasized that the Crown always has a duty to consult with Aboriginal groups when making decisions about land and resource use that may infringe on their Aboriginal title and stated that, "in most cases, the duty will be significantly deeper than mere consultation" (Kennedy, 2009, p. 40). The *Delgamuukw* case is recognized as the landmark case for Aboriginal title. Subsequent court cases have further clarified the Crown's duty to consult.

In the 2004 *Haida Nation* case, the Supreme Court of Canada held that the duty to consult applies even when Aboriginal title is unproven. The court defined the depth of consultation as a factor of both the strength of claim of the Aboriginal group and the severity of the potential negative impacts of the activity under consideration by the Crown. The court also stated that the duty to consult derives from the Crown's obligation to act honorably towards Aboriginal people and, as such, is a duty held by the Crown and not by a third party such as a resource extraction company (Newman, 2009).

The 2004 *Taku River Tlingit First Nation* case confirmed that the duty to consult applies even when Aboriginal title is unproven. This case demonstrated that an environmental assessment process constitutes an appropriate level of consultation. However, the Supreme Court of Canada emphasized that the duty to consult does not end with the environmental assessment process and that the Crown has a duty to consult with Aboriginal groups regarding matters such as the long-term management of the project site and the issuance of new permits (Kennedy, 2009).

In the 2005 *Mikisew Cree First Nation* case, the Supreme Court of Canada held that the Crown's duty to consult also applies when the Crown considers sanctioning activities that may negatively impact treaty rights (Newman, 2009).

2.4. Consultation Policies in British Columbia

The pivotal court cases described in Section 2.3 provide the legal foundation for the Crown's duty to consult. In 1995, in response to evolving Aboriginal case law, the government of British Columbia began to develop a policy to guide their officials on the procedural aspects of the duty to consult (BC MARR, 2010). These policy development efforts culminated in 2002 with the publication of the *Provincial Policy for Consultation with First Nations* (BC MARR, 2002). Although this policy emphasizes the need for its consistent application across government, it acknowledges that different provincial agencies may use different methods of consultation and that some agencies may even have drafted their own internal procedures for the consultation process. The policy also states that the depth of consultation should be determined based on the "soundness" of the Aboriginal claim in question, where the "soundness" is evaluated by provincial decision-makers using the resources available to them (BC MARR, 2002). Developed without any consultation with Aboriginal groups, this publication received criticism from Aboriginal communities for its lack of consideration for what consultation means to the communities on the receiving end of the process (New Relationship Trust, 2009).

The government of British Columbia continues to refine their consultation policy to remain aligned with Aboriginal case law. The most recent update, published in May 2010, is predominately influenced by the rulings in the 2004 *Haida Nation* case. This new policy states that the depth of consultation should be determined based on both the strength of claim of the Aboriginal group and the severity of the potential adverse impacts of the proposed activity on their Aboriginal rights (BC MARR, 2010). Despite these updates, the responsibility for determining these factors is still held by provincial decision-makers, essentially leaving this "consultation" process a unilateral decision-making process.

2.4.1. The Referral Process

Operationalization of the government of British Columbia's consultation policy has given rise to the "Crown referral process" (Morellato, 2008, p. 72). The referral process involves the following parties:

- Proponent: The person or organization wishing to carry out an activity on Crown land in British Columbia;

- Ministry: The government ministry responsible for the administration of the legislation and policies that apply to the resources that would be used by the proposed activity (e.g., The Ministry of Environment is the ministry responsible for administering the 1996 *Water Act* and therefore they process license requests from proponents who wish to carry out activities in and about streams in British Columbia); and

- Aboriginal Group: This may be a "band" (i.e., the organizational structure defined in the *Indian Act* which represents a particular body of Indians as defined in the *Indian Act*) or a service-delivery organization, such as Stó:lō Nation, that is authorized to handle referrals on behalf of its member bands (BC MARR, 2010, p. 22).

The channels of communication between these parties are shown in Figure 2.1. The proponent typically initiates communication by submitting an application to the relevant government ministry. The government ministry will then contact the Aboriginal groups that may be negatively affected by the proponent's proposed activity. Ongoing communications are represented in the figure by the green arrows; the government ministry is typically the go-between entity, communicating with both the Aboriginal groups and the proponent. The orange dashed line represents the possibility of direct communication between the proponent and the Aboriginal groups.

Figure 2.1.   The Referral Process: Communication Channels Between Parties
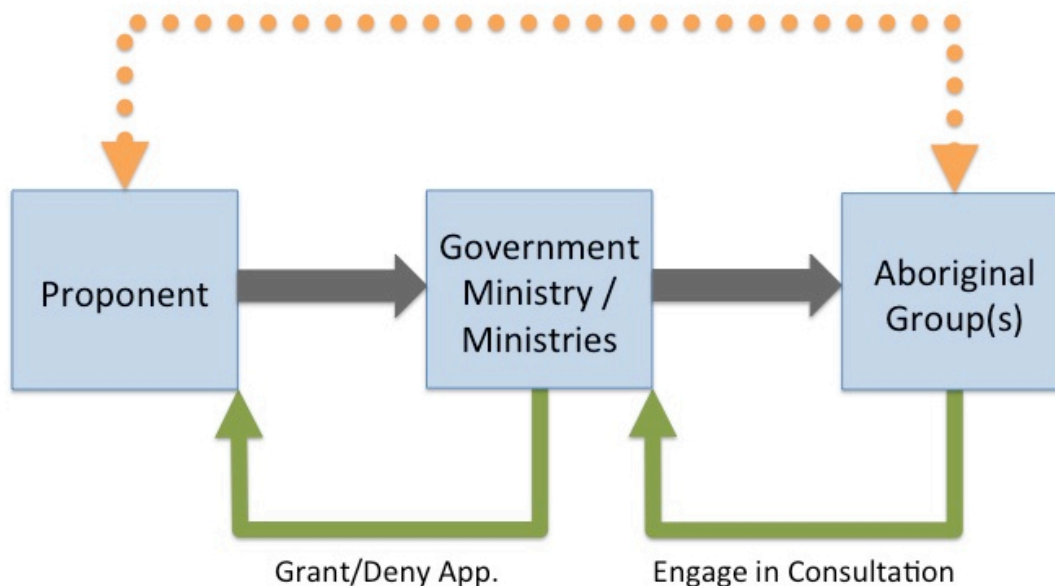
The referral process comprises the following four distinct stages (BC MARR, 2010):

- Preparation: Upon receipt of an application to carry out an activity on Crown land, government officials identify the Aboriginal groups that have interests in the land and resources associated with the proposed activity;

- Engagement: Government officials engage with the Aboriginal groups by posting a referral package to them which details the proposed activity. At this stage the Aboriginal groups are invited to participate in consultation with the government to discuss how the proposed activity may infringe on their Aboriginal rights;

- Accommodation: Government officials assess the consultation that has taken place and determine the need for accommodation. Upon identification of accommodation options, government officials negotiate with the Aboriginal groups to reach an accommodation agreement; and

- Decision and Follow-Up: Government officials provide a record of the decision on the proposed activity to the Aboriginal groups and ensure implementation of the negotiated accommodation agreement.

The nature of the referral process and the parties involved in it creates a complex web of interactions rife with pitfalls. The Crown considers *Indian Act* "bands" to be the

primary Aboriginal consultative entity. In recognition of the existence of Aboriginal organizational structures beyond these "bands", such as service-delivery organizations, the Crown often sends copies of the same referral package to several offices, thereby opening multiple channels of communication and making it unclear which parties are responsible for engaging in consultation (Morrison, 2013). Failing to establish and maintain a contact list for referral staff at the relevant Aboriginal offices often results in the Crown sending referral packages to Aboriginal political leaders or administrative staff who have not been mandated by their organizations to respond to referrals. In some cases, referral packages are sent to Aboriginal organizations without any contact person identified on the correspondence at all (Morrison, 2013). Creating a referral process with such inherent weaknesses serves to work against the goal of meaningful consultation.

2.4.2. The Referral Burden on First Nations

While the referral process was designed with the intention of being a predictable and transparent engagement process (BC MARR, 2010), it has been described as "one of the greatest logistical difficulties facing Aboriginal communities today" (Morellato, 2008, p. 72). Complaints about the referral process cover a range of issues, including: the short response time frames it imposes on Aboriginal groups (IHRC, 2010), the lack of capacity among Aboriginal groups to fully participate in the process due to insufficient human and financial resources (Robertson, 2007); barriers to evaluation of referrals by Aboriginal groups caused by a lack of detailed information in the referral packages (IHRC, 2010); and the fact that the level of consultation and accommodation is determined by government officials (Morellato, 2008). A recent case study conducted on referrals received by Stó:lō Nation highlights the inefficiencies inherent in the referral process and its ineffectiveness as a means of engaging in consultation with Aboriginal groups (Morrison, 2013).

2.4.3. A New Relationship: Towards Improved Consultation

Moving away from this inefficient and ineffective referral process requires a shift to a strategic level of engagement where Aboriginal groups negotiate with the Crown on a government-to-government basis and their Aboriginal right of self-government is central to land use and resource development decisions (Morellato, 2008). In 2005 the

First Nations Summit, the Union of British Columbia Indian Chiefs, the British Columbia Assembly of First Nations, and the government of British Columbia crafted *A New Relationship* document detailing the ways in which these parties intend to establish a government-to-government relationship based on respect, recognition, and accommodation of Aboriginal title and rights (BC MARR, 2005; UBCIC, 2009).

Two such government-to-government relationships that improve the referral process are Forest Consultation and Revenue Sharing Agreements (FCRSAs) and Strategic Engagement Agreements (SEAs). FCRSAs establish the share of the revenue that Aboriginal groups will receive from the forestry activities that take place on their traditional territories. FCRSAs define the consultative process for referrals generated by the forestry industry. Over one hundred FCRSAs have been signed with Aboriginal groups in British Columbia to date (BC MARR, 2014b). SEAs are designed to improve the referral process by establishing a mutually agreed upon set of procedures for consultation and accommodation. The government of British Columbia has signed nine SEAs with Aboriginal groups throughout the province to date, including a SEA with fourteen Stó:lō bands that was signed earlier this year (Stó:lō First Nations and the Province of British Columbia, 2014; BC MARR, 2014c). Both types of agreements are an improvement over the standard provincial referral process as they offer a greater opportunity for Aboriginal groups to have a say in how the land and resources of their traditional territories are used and, in doing so, take a step towards exercising their Aboriginal right of self-government.

Chapter 3.

The Stó:lō People and S'ólh Téméxw

3.1. A Connection to the Land

The Stó:lō people are an Aboriginal group with their own unique linguistic and cultural identity. The traditional language of the Stó:lō people is Halq'eméylem, a member of the Coast Salish language family (Smith, 2001). Halq'eméylem was an oral language until the 1970s when a standardized orthography was developed (Wells, 1987; Galloway, 2007). In Halq'eméylem the word Stó:lō means "river" and the Stó:lō people are the "People of the River" (Carlson, 1998, p. 7). The river in question is the waterway, known in English as the Fraser River, that flows through Stó:lō traditional territory. The Stó:lō people refer to their traditional territory as S'ólh Téméxw which means "Our Land" (Carlson, 2001a, p. 2). S'ólh Téméxw comprises the Lower Fraser River watershed of southwestern British Columbia, covering an area of approximately 1.2 million hectares (SXTA, 2006). Figure 3.1 shows a map of S'ólh Téméxw. Although S'ólh Téméxw extends into the United States of America, the International Boundary is used to delimit S'ólh Téméxw to the south in order to reflect the Canadian-specific legal and political context within which the Stó:lō people find themselves today.

The Stó:lō people say that they have occupied S'ólh Téméxw since time immemorial (Carlson, 1996a). The archaeological record supports this claim, tracing the presence of Aboriginal people within S'ólh Téméxw back approximately ten thousand years (Schaepe, 2001, p. 20). The oral histories of the Stó:lō people describe how the world was chaotic until the arrival of X̱ex̱á:ls, the transformers, who traversed S'ólh Téméxw transforming immoral people into stone and generous people into valuable local resources such as cedar, mountain goat, sturgeon, and salmon (Carlson, 1996a). During their travels, X̱ex̱á:ls fixed land features, as well as other people and animals,

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into permanent forms. By their actions X̱exá:ls "made the world right" and established the landscape of S'ólh Téméxw (McHalsie, Schaepe & Carlson, 2001, p. 6). Through these transformations the Stó:lō people have developed a kin relationship with the environment, identifying their local resources as their ancestors and treating them as part of their extended family (Carlson, 1996a). This complex personal relationship with the environment underlies the Stó:lō people's responsibility for the stewardship of S'ólh Téméxw which they frequently express in the phrase "S'ólh Téméxw te ikw'elo. Xolhmet te mekw'stam it kwelat.", meaning "This is our land. We have to take care of everything that belongs to us." (McHalsie, 2007, p. 85).

Figure 3.1.   S'ólh Téméxw: The Stó:lō People's Traditional Territory
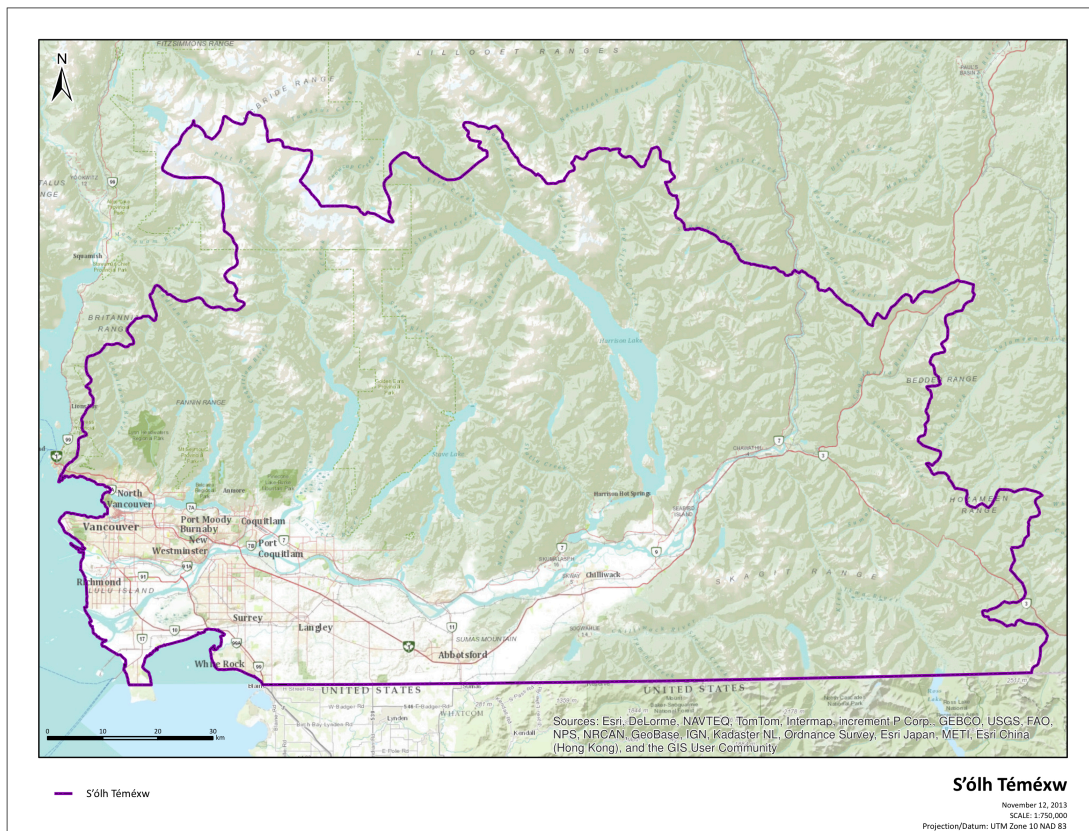
3.2. The Impacts of Colonialism

The Stó:lō people's ability to take care of S'ólh Téméxw using their traditional governance practices was greatly hindered by the arrival of the Europeans. In Halq'eméylem the word for people of European descent is Xwelítem, which translates to "hungry people" (Carlson, 2001a, p. 2). Xwelítem have been hungry for the resources of S'ólh Téméxw ever since the 1780s when the first maritime fur traders arrived off the shores of present-day British Columbia seeking to exchange manufactured products for animal pelts each summer. The Stó:lō people were willing and active participants in these seasonal exchanges, often holding the upper hand and determining the quality, type, and price of the manufactured goods. The land-based fur trade in S'ólh Téméxw began in 1827 when the Hudson's Bay Company established a permanent fur trading post in Fort Langley on the lower Fraser River. The traders married into Stó:lō families in order to ensure harmonious, long lasting relationships with the locals. The Stó:lō people leveraged their inter-marriage family ties to turn the fur trading post into a salmon trading post. During this era, Xwelítem access to the resources of S'ólh Téméxw was controlled by the Stó:lō people who directed the trade to benefit their traditional salmon, cranberry, and hazelnut economies (Carlson, 1996a).

Stó:lō control over Xwelítem access to and use of the resources of S'ólh Téméxw came to an end with the Fraser River Gold Rush of 1858, when over 30,000 American miners descended on the Lower Fraser Canyon (Carlson, 1996a, p. 60). In their insatiable hunger for gold the miners panned sandbars along the banks of the Fraser River and its feeder streams, negatively impacting Stó:lō villages, harvesting grounds, and fishing sites in the process. Although it lasted less than a year, the Fraser River Gold Rush was the catalyst for permanent migration into S'ólh Téméxw; concerned about the influence of the American miners, colonial authorities encouraged British farming families to settle in British Columbia (Carlson, 1996a).

The following decade saw extreme marginalization of Stó:lō settlements and land use patterns. Governor James Douglas created reserves for the Stó:lō people ranging in size from 162 to 3,887 hectares, essentially restricting them to small tracts of land that represented only a tiny portion of S'ólh Téméxw (Carlson, 2001b, p. 94). During this time Stó:lō leaders engaged with Douglas who led them to believe that, in recognition of

their Aboriginal title, treaties would be negotiated to compensate them for their lands. These treaties never materialized. In 1867 Joseph Trutch reduced the "Douglas" reserves by ninety-two percent (Carlson, 2001b, p. 94). The Stó:lō leadership participated in numerous petitions and public demonstrations in protest of this reduction. In 1874, twenty-five Stó:lō leaders joined forces with other Aboriginal leaders from nearby communities to petition the federal government requesting that their reserve land base be increased (Carlson, 1996a). Two joint federal-provincial reserve commissions, established in 1878 and 1913 to listen to Aboriginal concerns over the misappropriation of their lands, did little to improve the situation for the Stó:lō people. Despite hearing numerous testimonies from Stó:lō leaders and having the authority to settle reserve size issues "on the spot", the commissioners made little changes to the reserve land base leaving the Stó:lō people to live with the legacy of the Trutch reductions (Carlson, 1996a, p. 78; Carlson, 2001b).

3.3. Renewed Vigour in the Assertion of Aboriginal Rights

Despite being confined to reserves and subjected to over a century of debilitating government assimilation policies, such as those described in Section 2.2, the Stó:lō people's sense of cultural identity and belief in their Aboriginal rights remained steadfast. In 1969, the Stó:lō leadership became part of the national wave of Aboriginal opposition to Prime Minister Pierre Trudeau's Liberal Indian Policy (Carlson, 1996a). Recognizing the threat that Trudeau's "White Paper" posed to their existence as a unique cultural group, the Stó:lō leadership participated in the East Fraser District Council (EFDC) to advocate Aboriginal title and rights. During this time the Stó:lō leadership also formed the Chilliwack Area Indian Council (CAIC) to gain control over the management of local matters such as welfare, education, and housing, services that had been poorly administered by the federal government up to that point (Plant, 2002). In the mid-1970s the vision of these two local organizations began to align when the Stó:lō leadership spoke of the administration of local matters in terms of the Aboriginal right of self-government and saw treaties as a means to provide an economic base to support community development. In 1975 the Stó:lō leadership signed the *Stó:lō Declaration*, a document stating that the Stó:lō people have held Aboriginal title and rights to all of the land and resources of S'ólh Téméxw since time immemorial (Pennier, 1994). The next

two decades saw the establishment and restructuring of multiple Stó:lō administrative and political organizations, all working towards the overarching goal of asserting Aboriginal title and rights. In 1995 these organizations merged under a single political and service-delivery organization, known as Stó:lō Nation, for the purpose of maintaining and enhancing Stó:lō cultural values and identity and asserting the Aboriginal right of self-government (Plant, 2002). Stó:lō Nation entered into treaty negotiations with the governments of British Columbia and Canada as part of the "made in BC" treaty process that had been established several years earlier to address the unresolved Aboriginal Land Question in British Columbia (BCTC, 1991, p. 13; BC MARR, 2014a).

3.4. Cultural Resource Management: Stó:lō Heritage Policy

One of the ways the Stó:lō people assert their Aboriginal right of self-government is through the management and stewardship of their cultural resources (Schaepe, 2007). In 1995 Stó:lō Nation published the first *Stó:lō Heritage Policy* which defined Stó:lō heritage sites throughout S'ólh Téméxw and articulated the need for these sites to be treated with respect (Stó:lō Nation, 1995). In spite of having this policy in place, the Stó:lō people still witnessed evidence of damage to their heritage sites and cultural practice areas. In 1999 the Aboriginal Rights and Title (AR&T) Department at Stó:lō Nation began to refine the policy to make it more comprehensive (Schaepe, 2007). The work of the AR&T Department included discussions on the definition of heritage, the compilation of heritage site datasets, and the recognition of direct community action as an indicator of Stó:lō conservation priorities (Schaepe, 2011). There was an ongoing effort to understand Stó:lō cultural foundations and to present them in a contemporary manner. This effort, which involved engagement with community leadership in conjunction with researching several decades of interviews with cultural knowledge holders, ultimately led to the development and approval of a revised version of the *Stó:lō Heritage Policy* in 2003 (Stó:lō Nation, 2003a). The revised version of the *Stó:lō Heritage Policy* comprises specific management practices for the respectful treatment of Stó:lō heritage in S'ólh Téméxw on a site-type-by-site-type basis (Stó:lō Nation, 2003a; Schaepe, 2007). Concurrent with the release of the revised *Stó:lō Heritage Policy* was the creation of the *Stó:lō Heritage Resource Management Plan* which inventories Stó:lō heritage sites within a Geographic Information System (GIS), making it possible to

display these heritage sites on a map of S'ólh Téméxw (Stó:lō Nation, 2003b). This move to a landscape-level approach to stewardship paved the way for future cultural resource management and referral management initiatives at Stó:lō Nation.

3.5. Land Use Planning: The S'ólh Téméxw Use Plan

Land use planning was raised as a priority issue in response to treaty discussions around the topics of shared decision-making and governance in relation to lands and cultural heritage (Schaepe, 2011). In 2008 a project was launched by the Stó:lō Xwexwilmexw Treaty Association (SXTA) to develop a regional-scale Stó:lō land use plan that would facilitate treaty negotiations (SXTA, 2014). This project was led by the SRRMC, successor to the original Stó:lō Nation AR&T Department.

In recognition of shared rights and the network of relationships among the Stó:lō people that connects them to S'ólh Téméxw, the SXTA invited other Stó:lō organizations to collaborate with them during the development of this land use plan which they called the S'ólh Téméxw Use Plan (STUP) (Schaepe, Formosa, Schmidt & Brady, 2013). It was hoped that a collaborative approach would solidify the long-standing relationships between the Stó:lō people and avoid inter-Stó:lō conflicts over different visions of how their land and resources should be used. The SXTA developed the STUP under the direction of Schaepe and in collaboration with technical and operational staff from Stó:lō Nation, Stó:lō Tribal Council, and the Ts'elxwéyeqw Tribe (Schaepe, 2011).

The STUP uses the same boundary as the *Statement of Intent* submitted by the SXTA to the British Columbia Treaty Commission and shows the extent of S'ólh Téméxw in British Columbia (SXTA, 2006). As it is a contemporary expression of a uniquely Stó:lō-based set of relationships with the land, all traces of federal, provincial, and local government jurisdiction are absent from the STUP (Schaepe, 2011). Developed within a GIS, created and managed by the SRRMC, the STUP is informed by the *Stó:lō Heritage Policy* and contains an extensive collection of Stó:lō cultural heritage data.

The STUP was designed to be a strategic planning tool addressing economic development, cultural, and environmental relationships. The STUP groups Stó:lō cultural resources into meaningful "Use Areas" (Schaepe, 2011). Founded on the Stó:lō

people's complex interpersonal relationship with their environment, these Use Areas also represent environmentally sensitive regions on the landscape. Figure 3.2 shows the geographic distribution of these Use Areas throughout S'ólh Téméxw. Such groupings highlight the areas of S'ólh Téméxw that require protection and each Use Area represents a unique set of Stó:lō cultural landscape values and has set of protective requirements, a summary of which is provided in Sections 3.5.1–3.5.7. While the STUP delineates the areas throughout S'ólh Téméxw that require protection, it is important to note that it also serves the purpose of showing other parts of S'ólh Téméxw that may be open to economic development opportunities.

Figure 3.2. The S'ólh Téméxw Use Plan
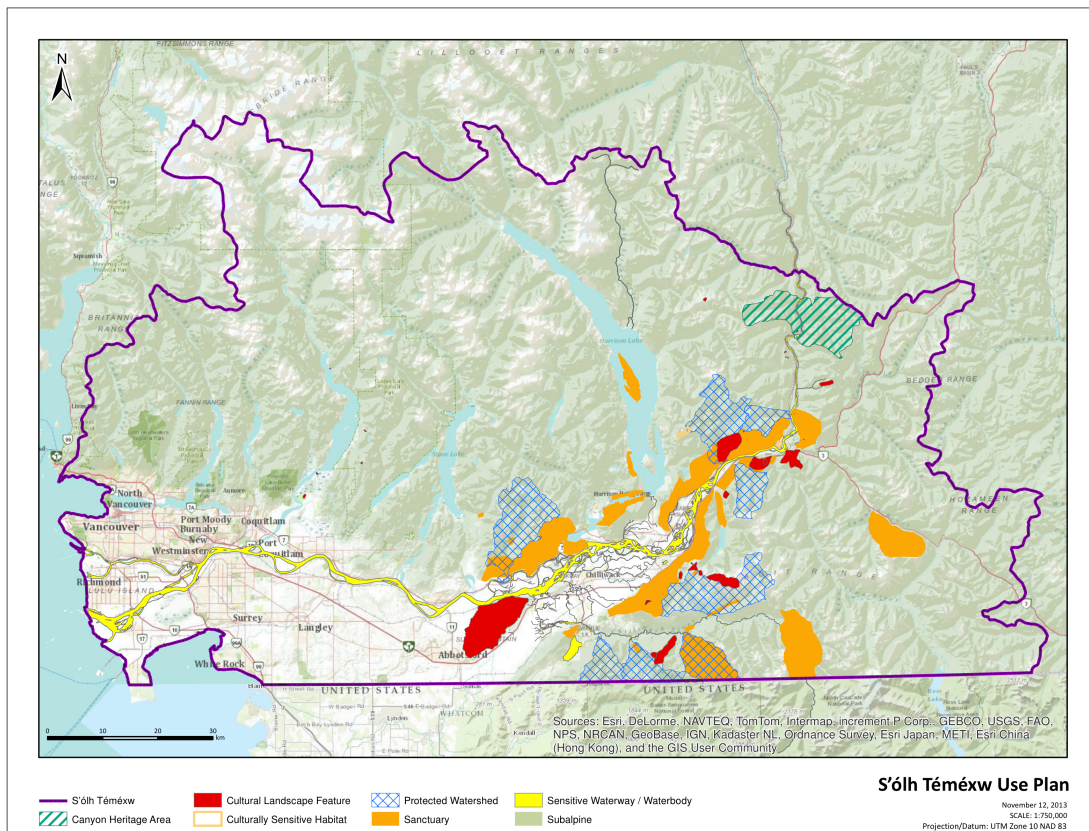
3.5.1. Cultural Landscape Feature Use Area

The Cultural Landscape Feature Use Area represents terrestrial sites on the landscape, including rocks, mountains, and other landforms, that are integral to the Stó:lō people's worldview and establish their unique relationship with the land and resources of S'ólh Téméxw. These sites, described in Stó:lō oral histories, are viewed as living parts of the landscape that must be treated with respect. Activities proposed within this Use Area must be assessed for their potential impacts on surface integrity and appearance (Schaepe et al., 2013). For example, a proposed open pit mine could negatively impact a mountain that represented a Stó:lō ancestor turned to stone; the extraction of gravel from the side of the mountain would be equivalent to breaking the ancestor's skin and alteration to the physical appearance of the mountain would make the ancestor's form unrecognizable to the Stó:lō people who view the mountain from a distance.

3.5.2. Culturally Sensitive Habitat Use Area

The Culturally Sensitive Habitat Use Area represents terrestrial sites on the landscape that are used by culturally recognized beings. These beings have a life force that supports the Stó:lō people's individual and collective health. Degradation of these sites may cause these beings to move or cease to exist, which in turn may negatively impact the health of the Stó:lō people. Activities proposed within this Use Area must be assessed for their potential impacts on the terrestrial habitat of culturally recognised beings (Schaepe et al., 2013). For example, a proposed access road could negatively impact a stl'áleqem by cutting through the trails it uses to move around an area of S'ólh Téméxw; the introduction of vehicular and foot traffic on the stl'áleqem's travel route may disturb it and cause it to move away from the area (McHalsie, 2007).

3.5.3. Sensitive Waterway/Waterbody Use Area

The Sensitive Waterway/Waterbody Use Area represents aquatic sites that are used by culturally recognised beings. These beings have a life force that supports the Stó:lō people's individual and collective health. A decline in water quality may cause these beings to move or cease to exist, which in turn may negatively impact the health of

the Stó:lō people. Activities proposed within this Use Area must be assessed for their potential impacts on the aquatic habitat of culturally recognised beings (Schaepe et al., 2013). For example, a proposed pesticide application could negatively impact the si:lhqey, the double headed serpent, by causing eutrophication of the slough channels that it lives in; degradation of the water quality could cause the si:lhqey to leave the slough channels (McHalsie, 2007).

3.5.4. Sanctuary Use Area

The Sanctuary Use Area represents areas on the landscape that support the Stó:lō people's spiritual activities. These activities, which include fasting, bathing, and the storage of possessions, require a pristine and private environment. Activities proposed within this Use Area must be assessed for their potential impacts on water quality, viewscapes, soundscapes, scentscapes, and privacy (Schaepe et al., 2013). For example, a proposed forestry cut-block could negatively impact the Stó:lō people's spiritual activities if a grove of trees that held ceremonial regalia was flagged for harvesting.

3.5.5. Protected Watershed Use Area

The Protected Watershed Use Area has been created to ensure that these watersheds are used in ways that protect the quality of the aquatic environments that they feed into further downstream in the Sanctuary Use Area. Activities proposed within this Use Area must be assessed for their potential impacts on riverbed structure and water quality, clarity, and flow (Schaepe et al., 2013). For example, a proposed copper mine could negatively impact the quality of the water flowing into spiritual bathing pools further downstream if the tailings ponds used as part of the mining process leaked into the nearby rivers.

3.5.6. Canyon Heritage Use Area

The Canyon Heritage Use Area is of great significance to the Stó:lō people due to its density of heritage resources and the variety of traditional activities it supports. Activities proposed within this Use Area must be assessed for their potential impacts on

contemporary traditional activities (Schaepe et al., 2013). For example, proposed dredging of the Fraser Canyon sand bars to uncover gold could negatively impact the Stó:lō people's fishing activities as dredging activities have the potential to disturb critical salmon habitat.

3.5.7. *Subalpine Use Area*

The Subalpine Use Area represents higher elevations where the forest transitions into meadowlands. It is a highly productive area that was heavily used in the past for activities such as hunting and gathering. This Use Area also represents mountain goat habitat. Activities proposed within this Use Area must be assessed for their potential impacts on the sensitive areas that comprise this ecosystem (Schaepe et al., 2013). For example, permitting all-terrain vehicles (ATVs) to access the area could negatively impact the meadowlands if ATV users went off-road creating new trails that damage the ecosystem.

3.6. Referrals

During the same time that Stó:lō Nation were launching cultural resource management initiatives, such as those described in Sections 3.4 and 3.5, they began to receive referrals in the wake of the 1997 *Delgamuukw* case. These referrals represented permissions sought by modern-day Xwelítem to carry out activities on S'ólh Téméxw. The AR&T Department was mandated by Stó:lō Nation to process these referrals. Each referral received was analyzed by the AR&T Department's land use planner who would then present his findings to the Referral Advisory Committee (RAC), a seventeen-member panel comprising Stó:lō chiefs and councillors. The RAC was responsible for making decisions on how to proceed with each referral.

The restructuring of Stó:lō Nation in 2004 resulted in a major staffing cut. Employees of the newly formed SRRMC were constantly multitasking to keep up with heavy workloads. These staffing challenges resulted in the adoption of a triage approach to dealing with referrals, with only the most obviously harmful referrals

receiving attention. The majority of referrals received during this period of time were not processed (D. Schaepe, personal communication, November 28, 2013).

As Stó:lō Nation began to rebuild capacity it dedicated more resources to managing referrals and mandated the SRRMC to handle all referrals. Recognizing the utility of the information contained in the referrals, the SRRMC identified an opportunity to build on the existing cultural resource management tools by using this referral information to develop a landscape-level understanding of the resource pressures on S'ólh Téméxw and the threats these pressures pose to Stó:lō cultural resources. As discussed in Section 1.1, in the summer of 2010 I started a research project with the SRRMC with the goal analyzing the referrals received by Stó:lō Nation to build this landscape-level picture of resource pressures.

Chapter 4.

Methodology

4.1. Literature Review

Prior to conducting my analysis of the resource pressures on S'ólh Téméxw, I studied academic articles and Crown publications to inform my understanding of what a referral is and why and how it is generated. I focused on the case law that shaped the Crown's duty to consult and the referral process developed by the government of British Columbia to meet this legal obligation (*Calder v. BC*, 1973; *Delgamuukw v. BC*, 1997; Mainville, 2001; BC MARR, 2002; Brackstone, 2002; *Haida Nation v. BC*, 2004; *Taku River Tlingit First Nation v. BC*, 2004; *Mikisew Cree First Nation v. Canada*, 2005; Kennedy, 2009; Newman, 2009; UBCIC, 2009; BC MARR 2010). I reviewed critiques of the referral process that discussed the burden it places on Aboriginal communities (Robertson, 2007; Morellato, 2008; IHRC, 2010; Morrison, 2013).

Central to my analysis was the selection of pertinent information from individual referrals, including information on the proponent proposing to carry out the activity, the government department issuing the referral, the type of activity being proposed, the natural resources being used by the proposed activity, and the licenses required. To guide this selection, I consulted Crown policies and statutes that affect natural resource use in British Columbia. The final stage of my analysis investigated how the activities represented by referrals may conflict with Stó:lō cultural interests and required me to familiarize myself with the STUP.

Reading of scholarly and popular press material throughout my internship allowed me to gradually gain an appreciation of how fundamental Aboriginal rights are to decision making in natural resource management (Tennant, 1990; Cassidy, 1991; Borrows, 1998; Taiaiake, 1999; BC MARR 2005; Borrows, 2005; Christie, 2007;

AANDC, 2014a). This ongoing background research also improved my understanding of the Aboriginal Land Question in British Columbia and how it is being independently addressed in the courts and through the British Columbia Treaty Process. Consulting books and reports on Stó:lō history and culture placed a local lens on this bigger picture and allowed me to situate my work among the many Stó:lō-driven processes that aim to assert their Aboriginal right of self-government (Wells, 1987; Pennier, 1994; Stó:lō Nation, 1995; Carlson 1996c, Carlson, 1998, Carlson, 2001c; Plant, 2002; Stó:lō Nation, 2003a; Stó:lō Nation, 2003b; SXTA, 2006; Miller, 2007; Schaepe, 2011; Stó:lō First Nations and the Province of British Columbia, 2012; Schaepe et al., 2013; Stó:lō Connect, 2014; Stó:lō First Nations and the Province of British Columbia, 2014).

4.2. Pilot Study

I chose to frame my analysis as a pilot study. Pilot studies are used to test out a research approach (Blessing & Chakrabarti, 2009). They provide small-scale environments for developing and evaluating research instruments, assessing data collection and analysis techniques, and uncovering potential problems with research design, methodology, and implementation (van Teijlingen & Hundley, 2001).

My pilot study data consisted of referrals. As discussed in Chapter 2, referrals are the operationalization of the Crown's duty to consult. A referral is formal correspondence from the Crown to an Aboriginal group, asking for their comments and recommendations regarding the potential negative impacts a proposed activity may have on their Aboriginal rights. A referral includes all documentary or informational content associated with the proposed activity (Stó:lō First Nations and the Province of British Columbia, 2012).

I designed my pilot study to analyze the documentary and informational content of each referral in order to answer the central questions of my research: which activity sector does the proposed activity belong to, who is proposing to carry out the activity, and where on the landscape do they want to carry it out. Although the SRRMC had referrals on file that dated back to 2006, only a subset of these could be processed within the timeframe of my internship. This reduced data set provided me with a scale-

appropriate environment within which to develop and test my research approach for analyzing referrals.

Pilot studies often provide valuable insights on the phenomenon they examine (van Teijlingen & Hundley, 2001). Lessons learned from this pilot study will potentially help guide the continued development of an in-house system for processing referrals received by Stó:lō Nation.

4.3. Referrals Data Set

I received direction from Schaepe to focus on the referrals received by Stó:lō Nation in 2008. I established three rules to determine the composition of the data set:

1. A referral initiated by the Crown in 2008 that had follow-ups after 2008 was included;
2. A referral initiated by the Crown prior to 2008 which had follow-ups in 2008 was not included; and
3. All referrals pertaining to the same project were treated as a single referral.

The application of these rules resulted in a data set containing 220 referrals.

4.4. Analysis

The analysis used in this research project builds off previous cultural resource management initiatives by Stó:lō Nation, including the use of GIS as a tool for creating landscape-level views of S'ólh Téméxw (Schaepe, 2007). My research approach was a multistage process that involved developing a categorization scheme for the referrals, determining the pertinent information to record from each referral, creating a GIS to provide spatial context for the referrals, generating visual representations of the referrals, and assessing the utility of the GIS as a tool for understanding how the referrals might impact Stó:lō cultural resources. I describe these stages in more detail in Sections 4.4.1–4.4.3.

4.4.1. Qualitative Analysis of the Referrals Data Set

I carried out a content analysis of the data set by applying counting, comparing, and contrasting methods to each individual referral. During the content analysis process I noticed patterns in the data set. I saw similarities among referrals either in terms of the government ministries that issued them, the statues they triggered, the assessments they required, the natural resource they proposed to use, their geographic location, their footprint, the type of license they required, the duration they required the license for, or the type of activity they were proposing to carry out. For example, while the referrals in the data set that proposed to build run-of-the-river hydroelectricity power plants differed in terms of the amount of land and water they required and the amount of electricity they could produce, they all triggered both the 1996 *Water Act* and the 1996 *Land Act*, opened correspondence channels with both the Ministry of Agriculture and Lands and the Ministry of Environment, and requested licenses to operate for more than thirty years. With an awareness of such underlying patterns, I began to explore nominal coding schemes to aggregate the referrals into categories that would contribute to a landscape-level understanding of the resource pressures on S'ólh Téméxw.

For my first attempt at developing a nominal coding scheme I grouped the referrals according to the type of natural resource being used by the activity proposed in the referral. This information is easily determined from a rapid review of a referral. While this grouping was intuitive, it had the drawback of non-exclusive categories resulting from the fact that a single referral may use or affect more than one natural resource type. This grouping also ignored the purpose of the activity, classifying a referral that uses water for mining purposes in the same category as a referral that uses water for an eco-tourism operation. Both these issues made this initial grouping unsuitable.

The need to find a better grouping for the referrals lead me to review the Crown Land Policies framework developed by the government of British Columbia (BC FLNRO, 2014). This framework lays out principles for the use of Crown land, including the purpose it may be used for, the requirements for obtaining a license, the duration of tenures, and pricing. Using the land use purpose categories from this framework, I chose the ten categories listed in Table 4.1 for my nominal coding scheme.

Table 4.1.   Nominal Coding Scheme Categories

Category	Definition
Addition to Reserve	Referrals of this type refer to an application by an Aboriginal group to either add a parcel of land to its existing reserve or to create a new reserve. The federal Additions to Reserve policy determines the conditions and issues to be addressed before land can become a reserve (AANDC, 2014b).
Agricultural	Referrals of this type refer to extensive and intensive agricultural activities. Extensive activities include the cultivation of soil to grow crops of cereal, seed, animal feed, vegetables, or fruit for mechanical harvesting (BC FLNRO, 2011b). Intensive activities include the commercial production of animals, fruits, or vegetables (e.g., poultry farms, dairy farms, greenhouses, nurseries) on parcels of land that are 15 hectares or less in size (BC FLNRO, 2011c).
Aquaculture	Referrals of this type refer to the commercial production of aquatic plants, finfish, shellfish or other invertebrates (BC FLNRO, 2011d). An example of an aquaculture referral received by Stó:lō Nation in 2008 was an application by a private company to harvest four metric tons of *Salicornia* spp. (sea asparagus) from Boundary Bay.
Commercial	Referrals of this type refer to Type A and Type B commercial activities. Type A activities include the selling, storing, or servicing of goods and commodities in built-up areas on a year-round basis (e.g., gas stations, restaurants, repair centers) (BC FLNRO, 2011e). Type A activities require access to power, phones, and roads and typically involve substantial improvements and considerable administrative oversight. Type B activities include the provision of services in rural areas on a seasonal basis (e.g., summer kiosks, helipads, boat launching ramps) (BC FLNRO, 2011e). Type B activities involve minor or temporary improvements and usually require only minimal administrative oversight. In addition to Type A and Type B activities, I included all seasons resorts and alpine ski resorts in this category (BC FLNRO, 2013).
Communication	Referrals of this type refer to the establishment of sites to locate facilities and equipment used for radio, television, microwave, or satellite communications (BC FLNRO, 2011f). An example of a communication referral received by Stó:lō Nation in 2008 was an application by a regional district to establish a Very High Frequency (VHF) radio repeater site on Hope Mountain that would provide emergency communications to fire and rescue responders in the local area.
Community/Institutional	Referrals of this type refer to activities carried out by local governments, or registered charity or non-profit organizations, for the purpose of providing a beneficial community service (BC FLNRO, 2011g). An example of a community/institutional referral received by Stó:lō Nation in 2008 was an application by a municipality to construct a trail for cyclists and pedestrians.
Industrial	Referrals of this type refer to forestry, mining (BC FLNRO, 2011j), waterpower (BC FLNRO, 2011n), aggregate and quarry (BC FLNRO, 2011a), and log handling (BC FLNRO, 2011i) activities. This category also covers general industrial activities including the storage, manufacture, assembly, testing, servicing, repairing, fabrication, wrecking, salvaging, processing and production of all goods and materials (BC FLNRO, 2011h).

Category	Definition
Residential	Referrals of this type refer to the permanent or temporary use of land for residential purposes (BC FLNRO, 2011k). An example of a residential referral received by Stó:lō Nation in 2008 was an application by a private citizen to demolish their existing carport to make way for the construction of a seawall on their property in Delta.
Transportation	Referrals of this type refer to the construction of roadways (BC FLNRO, 2011l) and railways. An example of a transportation referral received by Stó:lō Nation in 2008 was an application by a company to clear and upgrade an existing trail to provide road access to an exposed gas line near Harrison Hot Springs.
Utilities	Referrals of this type refer to linear public and private utilities, including oil and gas pipelines, sewer and water systems, electrical transmission lines, telephone lines, and cable TV lines (BC FLNRO, 2011m).

While this grouping provided a meaningful aggregation of the referrals based on the general purpose of the proposed land use, it was not precise enough to develop an adequate picture of the resource pressures on S'ólh Téméxw. It was necessary to develop subgroupings that explored the purpose of the proposed land use in more detail. I used a combination of the information contained in the Crown land use policy documentation and the knowledge I gained about referrals from my content analysis to expand my nominal coding scheme by an additional two levels, the details of which can be found in Tables 5.2 – 5.11. Once I confirmed my three-level nominal coding scheme, I assigned each referral in the data set to the appropriate category.

4.4.2.   Creation of an Electronic Summary of the Referrals Data Set

All the referrals I analyzed for my research project were paper-based. In order to carry out further analysis of the data set I had to convert the categorized paper-based referrals into an electronic summary. I used a Microsoft Excel spreadsheet to store the summary information for each referral. Based on my content analysis, I chose to include the information listed in Table 4.2 in the spreadsheet.

Table 4.2.   Referral Summary Information Recorded in Electronic Format

Information Type	Details
Proponent	Information about the proponent proposing to carry out the activity, including name, contact details, British Columbia Registration number, Goods and Services Tax number, other referrals under review, other licenses already granted, and associated parent company or subsidiary (if applicable).
Issuant	Information about the government department generating the referral, including ministry, division, and branch (if applicable).
Activity	Information about the activity being proposed, including its nominal coding scheme category and its trigger (if applicable). For example, an industrial camp may be the nominal coding scheme category for a referral, but this activity may only be required because there is a run-of-the-river hydroelectricity project being developed. Recording the run-of-the-river hydroelectricity project as the trigger provides additional context for the referral.
Assessments / Authorizations	Assessments and authorizations triggered by the referral, including federal and provincial environmental assessments and harmful alteration, disruption or destruction (HADD) authorizations for fish habitat.
Natural Resources	Details of the natural resources used by the proposed activity, including amount of water being used, amount of aggregate or minerals being extracted, amount of electricity being generated, and size of land being used.
License	Details of the license required for the proposed activity, including type and duration.

I assigned a unique identifier to each referral and used it to index the spreadsheet. I pulled the pertinent information listed in Table 4.2 from every referral and manually entered it into the spreadsheet.   Once in electronic format, the referral summary data could be used to generate pie charts and maps in the GIS.

4.4.3.   Generation of Visual Representations of the Referrals Data Set

I used Microsoft Excel to generate pie charts displaying the proportion of referrals by category type of the nominal coding scheme. While these pie charts provided an easily digestible and informative overview of the referrals, they lacked spatial context.

The next step in my analysis explored the use of ESRI's ArcGIS software to create a GIS to provide the spatial context for the referrals.

For each referral, ArcGIS was used to generate a shapefile representing the footprint of the activity proposed by the referral. Lisa Davidson, a researcher at the SRRMC, carried out this digitization work. Using the unique identifier for each referral, the shapefiles were linked to the pertinent information contained in the spreadsheet. For example, a shapefile in the GIS that delineated a 28-acre lot off Whatcom Road in the City of Abbotsford was assigned the unique identifier DevID02 and linked to the DevID02 entry in the spreadsheet that contained summary information for the referral including the request for a water license on Sumas River for the purpose of agricultural irrigation. The creation of this GIS allowed the footprint and pertinent information for each referral to be displayed on a map of S'ólh Téméxw, providing a more powerful visual summary of the data set.

For the final stage of my analysis, I investigated the potential impact of the referrals on Stó:lō cultural resources. The STUP comprises spatial data and accompanying documentation to guide its use and interpretation. The STUP spatial data was added to the GIS allowing the areas of cultural importance to be displayed on the same map as the referrals. This permitted a visual analysis of areas of potential conflict.

4.5. Limitations

While the novelty of this analysis increases the likelihood that important lessons will be learned about referrals and the resource pressures on S'ólh Téméxw, it is important to recognize some of the limitations of the methods used for this analysis. I discuss three such limitations in the subsections below.

4.5.1. *Pilot Study Data*

One of the characteristics of a pilot study is the use of a small subset of data to test a research approach. Restricting the data set to referrals received by Stó:lō Nation in 2008 that meet the three criteria outlined in Section 4.3 may cause certain referral trends to be missed. Cyclical government license renewal processes that occur on

either side of the pilot study cut off dates will not be captured. Similarly, megaprojects that have consultation phases spanning years may not be included in the pilot study data set even though they contribute significantly to the resource pressures on S'ólh Téméxw.

4.5.2.   Intercoder Reliability

Assigning a referral to a category in the three-level nominal coding scheme is, for the most part, a straightforward process. Often the nature of the proposed activity is printed on the front page of the referral. Other times it is necessary to read through referral supporting documentation to find this information. However, sometimes referrals come through with a stated land use that does not match the description of the proposed work or that ignores the larger context within which the proposed work will be carried out. In such cases, an informed judgment was required to categorize the referral. For example, when industrial projects destroy riparian habitat to make way for their physical works, they must create new protected riparian areas to make up for the loss of habitat. Often the provincial government classifies these habitat compensation activities as "conservation" or "land improvement" referrals. Such labels fail to capture the fact that established riparian habitat was destroyed to make way for an industrial project and gloss over the issue of riparian area substitutability. Rather than grouping such referrals into an environmental or conservation category, I categorized them as general industrial activities aimed at habitat compensation. This subjective decision-making raises the question of whether another person would have been able to produce the same categorization of the data set that I produced using the same three-level nominal coding scheme.

4.5.3.   Time and Human Resource Constraints

Forestry referrals include Forest Stewardship Plans (FSPs), the content of which is prescribed by the 2002 *Forest and Range Practices Act*. FSPs are landscape-level operational plans developed by forest licensees to propose results and strategies to address a range of government objectives for a variety of forest values. FSPs detail a licensee's planned development of roads and cut-blocks over a 5-year period. The maps that accompany FSPs often show upwards of 100 cut-blocks dispersed across S'ólh Téméxw. The inclusion of such a large number of cut-blocks makes the footprint

of these referrals complicated and time-consuming to digitize in a GIS. Given the human resources available to carry out the digitizing work, with Lisa single-handedly generating shapefiles for each referral, and the time constraints of the internship, I made a decision to omit all forestry referrals from the digitization workload. As a result of this decision, forestry referrals do not appear in the GIS. However, forestry referrals still appear in the pie-chart representations and form part of the electronic summary of the referrals.

Chapter 5.

Results

5.1. The Activity Sectors Generating Resource Pressures

As discussed in Section 4.4, I generated count tables to summarize how many referrals appeared in each category of the nominal coding scheme. Referral counts for the first level of the coding scheme are shown in Table 5.1. I also generated pie charts to provide a visual representation of the proportion of referrals in each category. The pie chart for the first level of the coding scheme is shown in Figure 5.1.

Table 5.1.　　All Referrals: Level One Category Counts

Level 1 Categories	Number of Referrals
Addition to Reserve	2
Agricultural	2
Aquaculture	1
Commercial	3
Communication	5
Community/Institutional	69
Industrial	108
Residential	13
Transportation	9
Utilities	8
Total Number of Referrals	**220**

Figure 5.1.   All Referrals: Level One Visualization
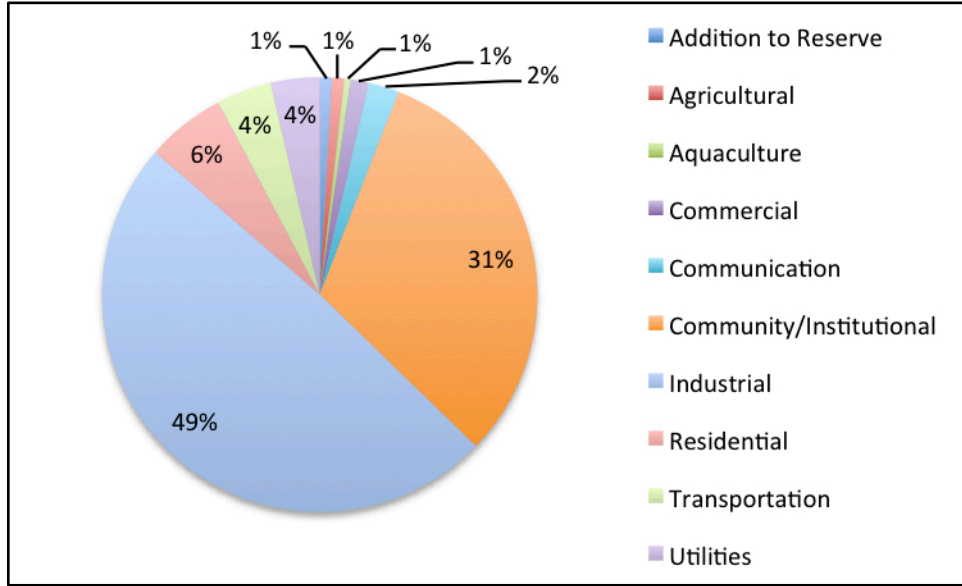
The results from the first level categorization demonstrate that "Industrial" referrals make up forty-nine percent of the data set and "Community/Institutional" referrals make up thirty-one percent of the data set. The remaining twenty percent of the data set comes from "Residential", "Transportation", "Utilities", "Communication", Commercial", "Agricultural", "Addition To Reserve", and "Aquaculture" referrals, in order of decreasing size.

Referral counts for the second and third levels of the coding scheme are shown in Tables 5.2 to 5.11. Pie charts for the second level of the coding scheme were generated for cases with three or more data points and are shown in Figures 5.2 to 5.6.

Table 5.2.   "Addition to Reserve" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Addition to Reserve	Claim Settlement Agreement	Compensation for Previous Construction on Reserve	2
Total Number of Referrals			**2**

Table 5.3.   "Agriculture" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Agriculture	Extensive	Frost Protection, Irrigation & Flood Harvest	1
	Intensive	Irrigation	1
Total Number of Referrals			**2**

Table 5.4.   "Aquaculture" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Aquaculture	Non-Spawn-on-Kelp Marine Plant Harvest	Sea Asparagus Harvest	1
Total Number of Referrals			**1**

Table 5.5.   "Commercial" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Commercial	All Seasons Resort	All Seasons Resort	1
	General Type B	Guide Outfitter Cabins	1
		Marina	1
Total Number of Referrals			**3**

Table 5.6.   "Communication" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Communication	Communication Site	Communication Site Only	4
		Communication Site and Generator Station	1
Total Number of Referrals			**5**

Table 5.7.   "Community/Institutional" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Community/Institutional	Environmental, Conservation & Recreation	Monitor: OGMA	1
		Monitor: Snow Survey	4
		Monitor: Weather Station	1
		Habitat Compensation	1
		Habitat Protection	5
		Recreation	8
		Resource Protection	3
	Infrastructure	Facility	3
		Groundwater Mngt.	1
		Land Transfer	2
		Linear Structure	7
	Planning	Heritage Plan	1
		Official Community Plan	1
		Water Mngt. Plan	1
	Public Safety	Bank Erosion Protection	11
		Debris Removal	5
		Dikes/Berms/Dams	3
		River Gravel Removal	9
		Other (Pump Upgrade)	1
		Rock Removal	1
Total Number of Referrals			**69**

Table 5.8.   "Industrial" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Industrial	Aggregate & Quarry	Rock	1
		Sand & Gravel	11
	Forestry	Forestry	37
	General	Add Concrete Biofilter	1
		Add Open-Sided Shed	1
		Barge Landing	4
		Docking Facility	1
		Habitat Compensation	4
		Industrial Camp	2
		Intake/Penstock	1
		Lay Down & Work Area	1
	River Gravel Removal by Municipality	River Gravel Removal by Municipality	2
	Watercourse Infill	Watercourse Infill	4
	Log Handling	Handling & Storage	1
		Pulp & Paper Mill	1
	Mineral Exploration	Diamond	1
		Gold	1
		Nickel	1
	Bank Stabilization	Riprap	4
		Riprap & Plants	1
	Unsafe Tree Removal	Unsafe Tree Removal	1
	Debris Removal	Logs & Gravel	1
	Marina Dredging	Marina Dredging	3
	River Dredging	River Dredging	2
	Tree Removal/Replant	Tree Removal/Replant	1
	Waterpower	RoR General	17
		RoR Powerhouse Site	3
Total Number of Referrals			**108**

Table 5.9.   "Residential" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Residential	Private Moorage	Build Elevated Walkway & Relocate Float	1
	Residential Land	Carport Demolition & Seawall Construction	1
		Habitat Compensation	2
		Agriculture Home Plate	1
		Multifamily Residential Development Project	1
		Premature Recreational Tenure Replacement	1
		Recreational Tenure Conversion	1
		Residence Assignment	1
		Seasonal Residence Assignment	3
	Residential Power	Run-of-the-River	1
Total Number of Referrals			**13**

Table 5.10.   "Transportation" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Transportation	Airport	Reactivate Existing Airstrip	1
	Railway	Linear Extension to an Existing Industrial Branch	1
	Roadway	Access Road	7
Total Number of Referrals			**9**

Table 5.11.   "Utilities" Referrals: Category Counts

Activity Level 1	Activity Level 2	Activity Level 3	Number of Referrals
Utilities	Electrification Project	Electrification Project for First Nations	1
	Sewer	Sewer Mains & Pump Station	1
	Transmission Line	Line & Poles	1
		Aerial Right-of-Way	2
		Tenure Amendment	2
	Water Line	Water Line	1
Total Number of Referrals			**8**

Figure 5.2.   "Community/Institutional" Referrals: Level Two Visualization
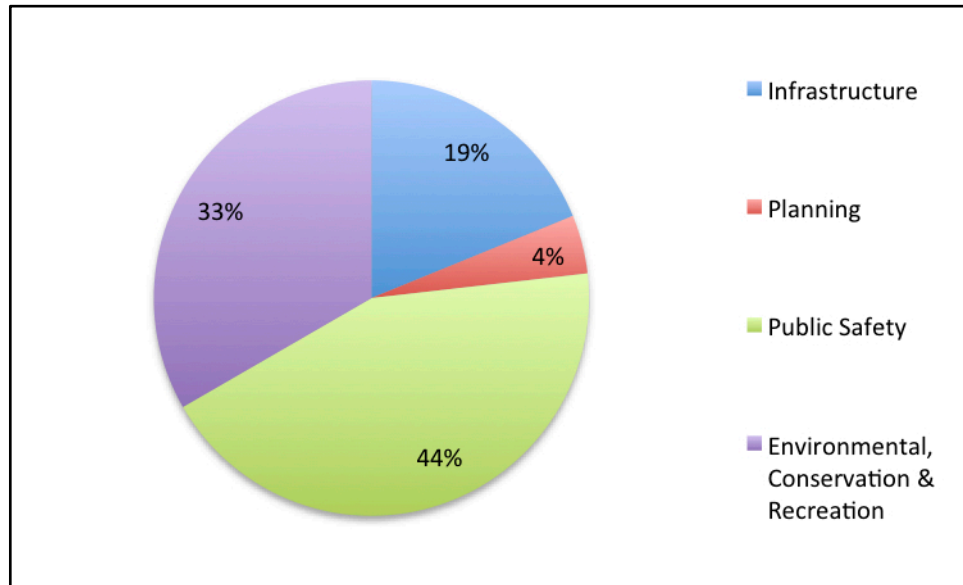
Figure 5.3.   "Industrial" Referrals: Level Two Visualization
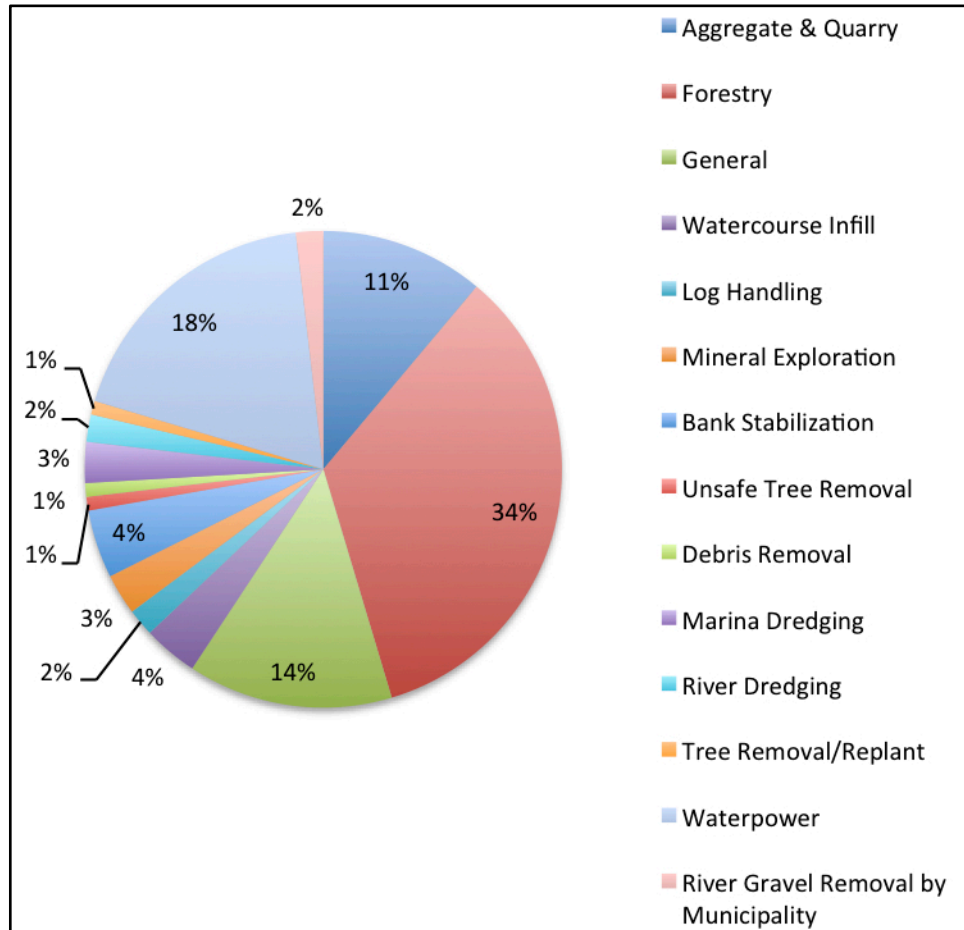
Figure 5.4. "Residential" Referrals: Level Two Visualization
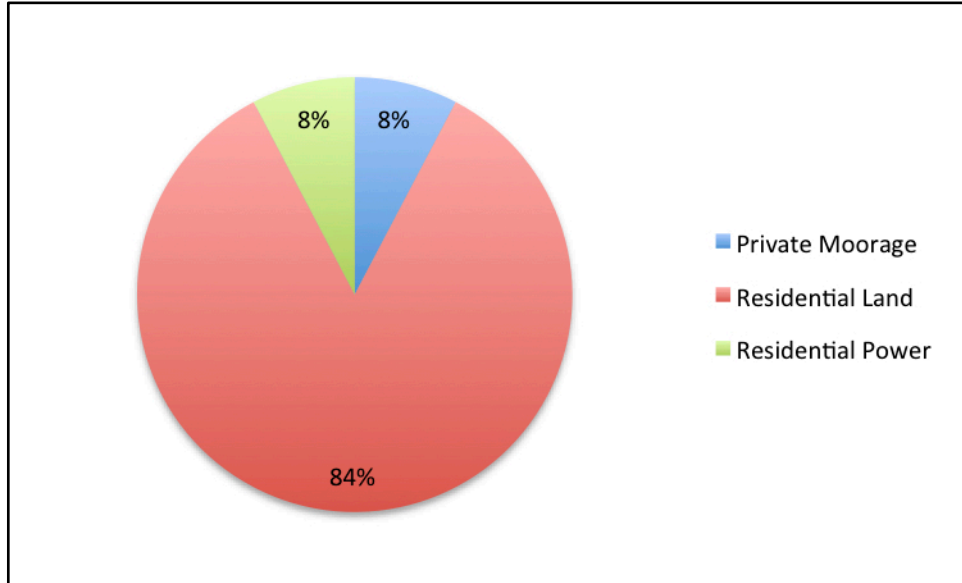
Figure 5.5. "Transportation" Referrals: Level Two Visualization
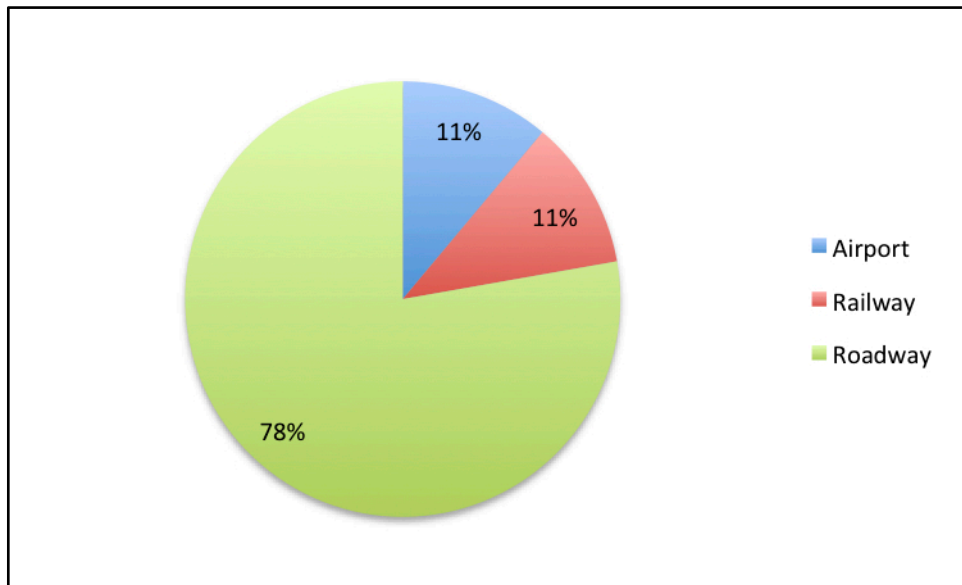
Figure 5.6.   "Utilities" Referrals: Level Two Visualization
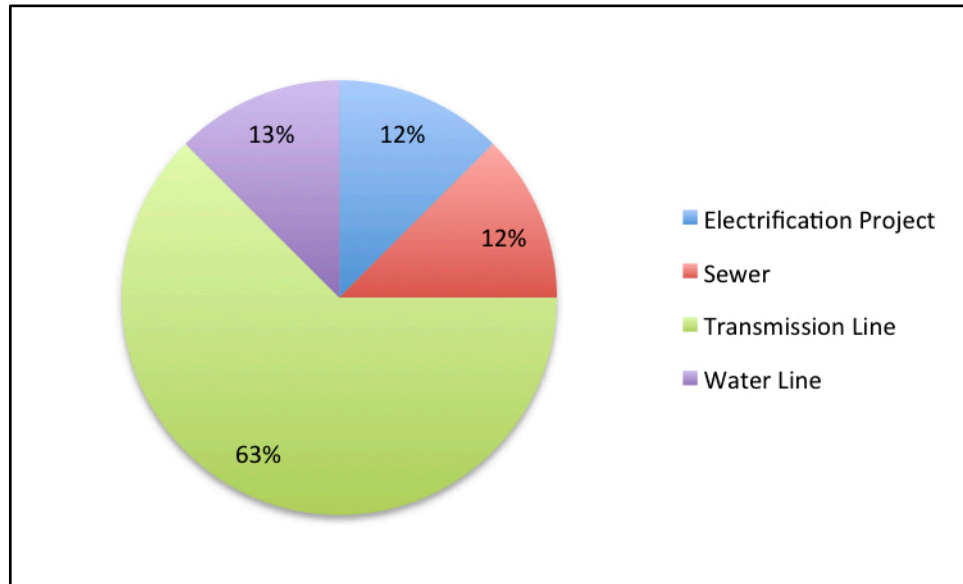
5.2. The Proponents Proposing These Activities

Once I had an understanding of the types of activities being proposed on S'ólh Téméxw, I analyzed the data set to find out who was seeking permission to carry out these activities. I identified five basic proponent types:

1. Private: An individual or a company;
2. Crown: The government of British Columbia or the government of Canada;
3. Local Government: The Fraser Valley Regional District (FVRD) and its member municipalities or the Greater Vancouver Regional District (GVRD) and its member municipalities;
4. Aboriginal: Band / Nation / Tribal Council; and
5. Not-for-Profit: Not-for-profit organizations, including charitable organizations.

Table 5.12 shows the breakdown of referrals by basic proponent type. Fifty-five percent of the referrals come from the private sector, twenty-two percent come from local government, and twenty percent come from the Crown.   The remaining three

percent of referrals come from Aboriginal groups and not-for-profit organizations. Table 5.13 shows a more detailed breakdown of the referrals by proponent type.

Table 5.12.   Referrals Grouped by Basic Proponent Type

Proponent Type	Number of Referrals
Private	101
Crown	36
Local Government	41
Aboriginal	2
Not-for-Profit	3
Total Number of Referrals	**183**

Table 5.13.   Referrals Grouped by Detailed Proponent Type

Proponent Type	Number of Referrals
Private: Individual	19
Private: Company	82
Crown: Government of British Columbia	34
Crown: Government of Canada	2
Local Government: FVRD	7
Local Government: FVRD Member Municipality	13
Local Government: GVRD	3
Local Government: GVRD Member Municipality	18
Aboriginal	2
Not-for-Profit	3
Total Number of Referrals	**183**

All businesses, corporations, and societies in British Columbia are incorporated and registered under the Corporate Registry (BC Registry Services, 2013). In addition to extracting information on the proponent's name and address, I examined the referrals for information on the proponent's British Columbia Registration Number. Using this

information I was able to identify a number of referrals from subsidiaries of the same parent company. Table 5.14 shows a breakdown of private company referrals by parent company and highlights the potential impact that a single company may have on S'ólh Téméxw.

Table 5.14.   Private Company Referrals Grouped by Parent Company

Referrals by the Same Parent Company	Number of Parent Companies
Parent Company with 1 Referral	36
Parent Company with 2 Referrals	4
Parent Company with 38 Referrals	1

5.3. The Location and Extent of These Activities

For each referral, I combined the information about the proposed activity with a digital shapefile of the activity's footprint to create a GIS that would show the locations of the referrals on a map of S'ólh Téméxw. Figure 5.7 shows a map created in the GIS that demonstrates the geographic location and extent of the proposed activities, excluding forestry proposals.

Figure 5.7.   All Referrals Displayed on S'ólh Téméxw
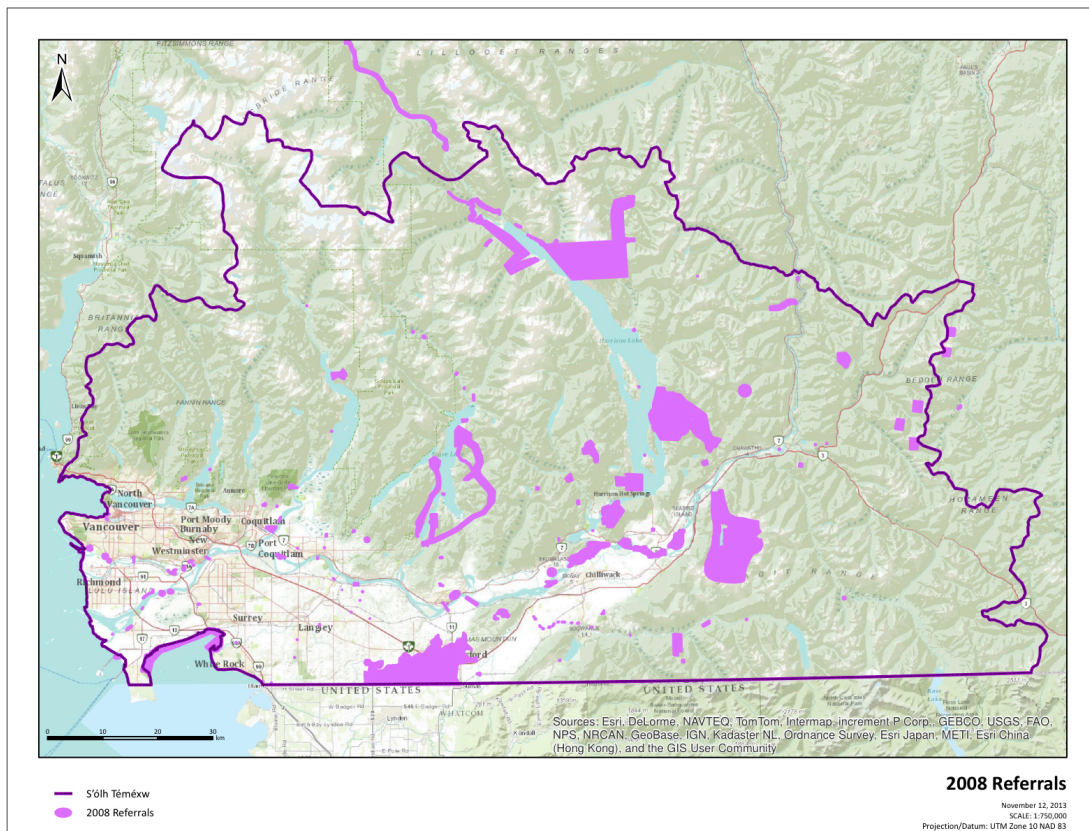
The GIS can be used to zoom into any referral and click on it to pull up its pertinent information. Figure 5.8 shows an example of this functionality. The pertinent information displayed for each referral in the GIS is customizable; the user has the ability to pick which information stored in the electronic summary will be displayed on the map in the GIS.

Figure 5.8.   Footprint and Related Information of Two Referrals

RefID: 86
Date: 18/07/2008
Category: Community/Institutional/Env. Con & Rec/Habitat Compensation
Trigger: Run-of-River
Licence Type: Licence of Occupation (More than thirty years)
Hectares: 2.821
Applicant: MOE & MAL
Proponent: Private/Company (x2)

RefID: 170
Date: 18/01/2008
Category: Industrial/General/Industrial Camp
Trigger: Run-of-River
Licence Type: Licence of Occupation (Five to ten years)
Hectares: 6.5000
Applicant: MAL
Proponent: Private/Company

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO,
NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China
(Hong Kong), and the GIS User Community

Referral Example 1: Detail

November 15, 2013
SCALE: 1:15,000
Projection/Datum: UTM Zone 10 NAD 83

S'ólh Téméxw
2008 Referrals

The GIS can also be used to search for referrals that match certain criteria. Figure 5.9 shows a screen shot from the GIS displaying all thirty-eight referrals, outlined in turquoise, associated with the parent company discussed in Section 5.2.

Figure 5.9.   Thirty-Eight Referrals From One Parent Company
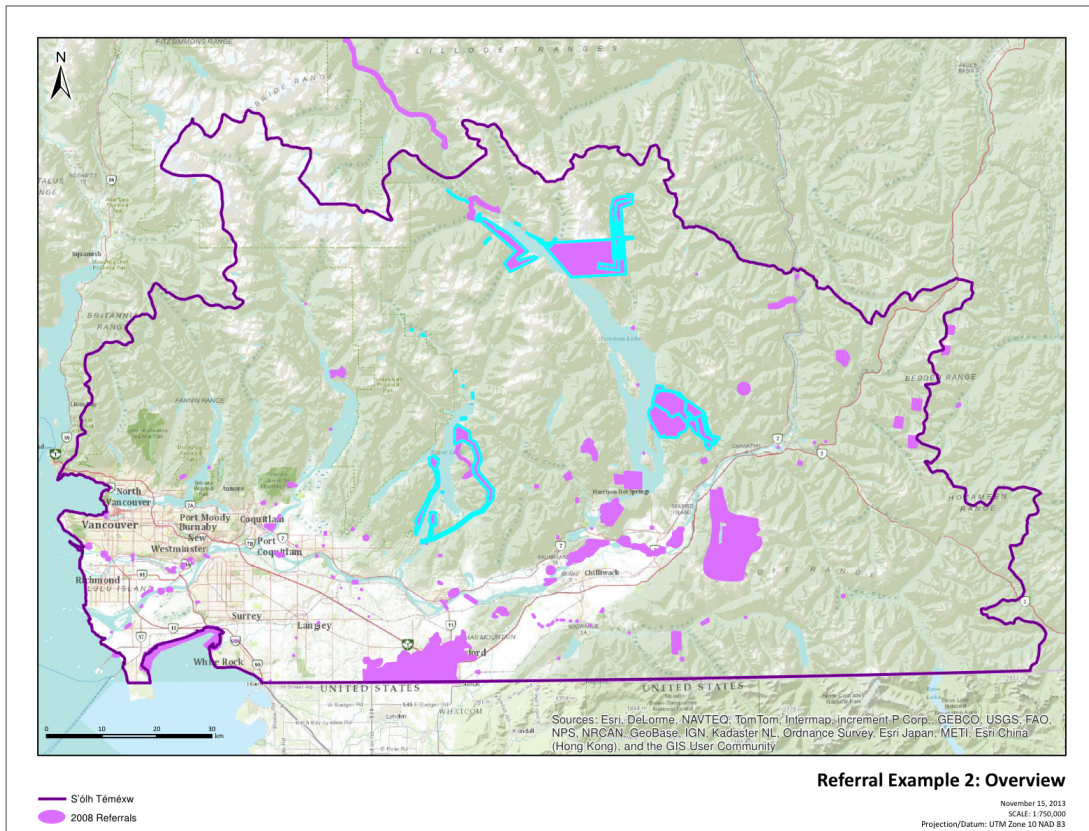
5.4.   Potential Conflicts with Stó:lō Cultural Resources

As discussed in Chapter 3, the STUP comprises a spatial data set that delineates Use Areas within S'ólh Téméxw that represent cultural resources that the Stó:lō people wish to protect. I added the STUP spatial data to the GIS to display these areas of cultural importance on the same map as the referrals. This permitted a visual analysis of areas of potential conflict. Figures 5.10 to 5.12 show examples of referrals that overlap with Use Areas from the STUP.

Figure 5.10.   Conflict Analysis: STUP and a Quarry and a Hydroelectricity Project
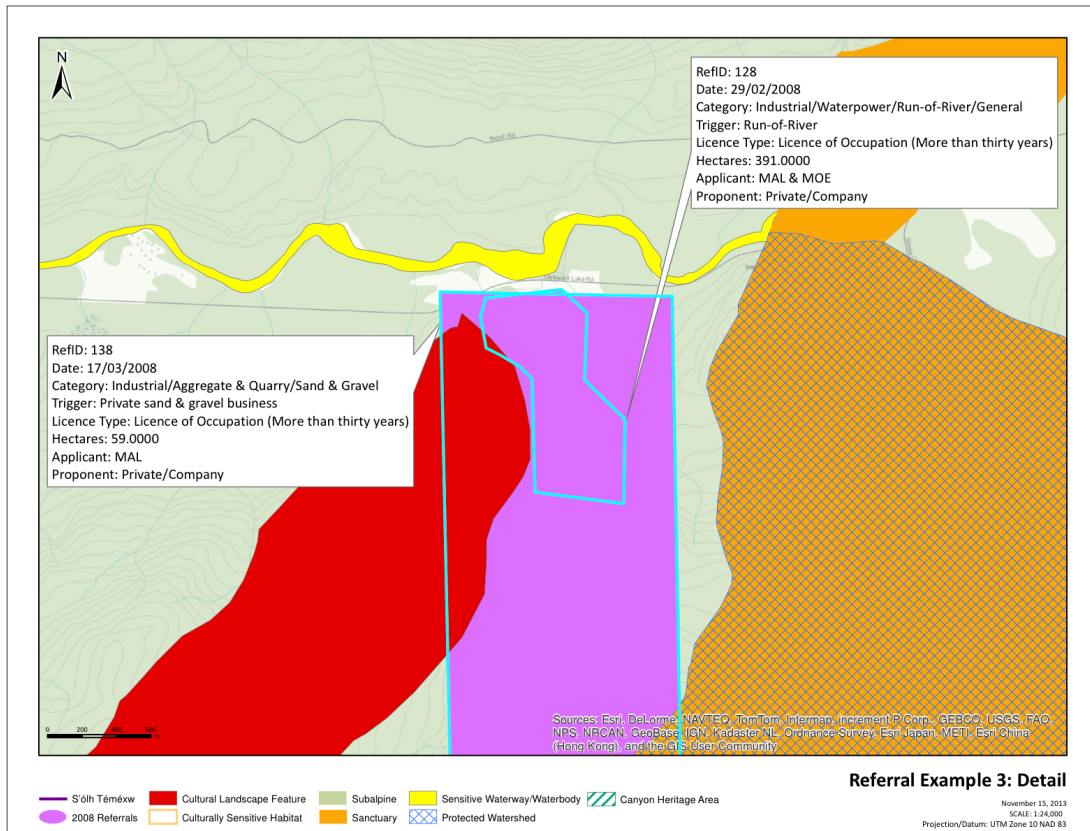
The footprint of the proposed sand and gravel quarry displayed in Figure 5.10 overlaps with a Cultural Landscape Feature Use Area from the STUP. Engagement on this referral would require the concern outlined in Table 5.15 to be addressed.

Table 5.15.   Conflict Analysis: STUP and a Quarry

Overlap with STUP Category	Concern(s) to be Addressed
Cultural Landscape Feature	Will the proponent ensure that no sand or gravel is removed from the cultural landscape feature during quarrying?

The footprint of the proposed run-of-the-river hydroelectricity project displayed in Figure 5.10 overlaps with three types of Use Areas from the STUP: Cultural Landscape

Feature, Protected Watershed, and Sanctuary. Engagement on this referral would require the concerns outlined in Table 5.16 to be addressed.

**Table 5.16.   Conflict Analysis: STUP and a Hydroelectricity Project**

Overlap with STUP Category	Concern(s) to be Addressed
Cultural Landscape Feature	Will the proponent ensure that the cultural landscape feature does not experience any structural damage from the use of explosives to make way for pipelines or other physical structures?
Protected Watershed	Will the proponent ensure that run-of-the-river activities carried out within the Protected Watershed Use Area do not negatively impact the riverbed structure or water quality, clarity, and flow of the waterbodies downstream?
Sanctuary	Will access to the spiritual use areas remain unimpeded during the construction and operational phases of the run-of-the-river? Specifically, will the proponent ensure that community members receive keys to any new gates that may be erected on roads or trails they currently use to access spiritual use areas? Will community members continue to have the required level of privacy to carry out their spiritual activities during the construction and operational phases of the run-of-the-river? Specifically, will the proponent design the run-of-the-river in such a way as to avoid work crews traversing spiritual use areas? Will the viewscape, soundscape, and scentscape of the spiritual use areas remain unaltered during the construction and operational phases of the run-of-the-river? As the overlap of the run-of-the-river and the Sanctuary Use Area is coincident with the overlap of the run-of-the-river and the Protected Watershed Use Area, the quality of the water in the spiritual bathing pools will remain at an acceptable level during the construction and operational phases of the run-of-the-river if the Protected Watershed concerns listed above are addressed.

The footprint of the proposed all seasons resort displayed in Figure 5.11 overlaps with four types of Use Areas from the STUP: Sanctuary, Cultural Landscape Feature, Protected Watershed, and Subalpine. Engagement on this referral would require the concerns outlined in Table 5.17 to be addressed.

Figure 5.11.   Conflict Analysis: STUP and an All Seasons Resort
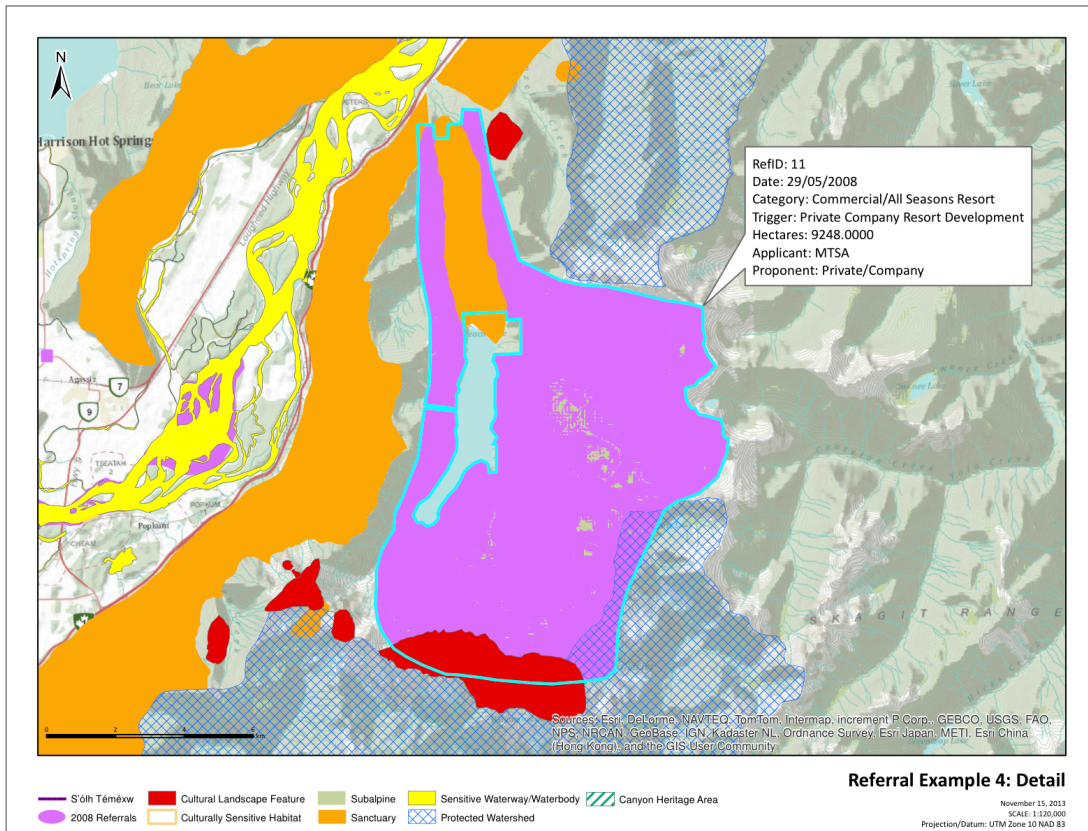
The footprint of the proposed diamond exploration program displayed in Figure 5.12 overlaps with the Sanctuary Use Area from the STUP. The extent of the work associated with this referral requires the creation of eight drill holes from four sites, all on existing roads. Due to the number and location of the drill holes, only minimal engagement would be required on the proposed work to ensure that Stó:lō community members who use the nearby Sanctuary Use Areas are aware of when the work will take place. However, an in-depth engagement would be needed around the larger question of whether a diamond mine is an acceptable activity in such close proximity to two Sanctuary Use Areas. If the activity was deemed acceptable by Stó:lō, the engagement would also need to cover the issue of revenue-sharing.

Table 5.17.   Conflict Analysis: STUP and an All Seasons Resort Referral

Overlap with STUP Category	Concern(s) to be Addressed
Cultural Landscape Feature	Will the proponent ensure that no physical structures (e.g., ski lifts, communication towers, commercial buildings) are erected on the cultural landscape feature?
Protected Watershed	Will the proponent ensure that resort activities carried out within the Protected Watershed Use Area do not negatively impact the riverbed structure or water quality, clarity, and flow of the waterbodies downstream?
Sanctuary	Will access to the spiritual use areas remain unimpeded during the construction and operational phases of the resort? Specifically, will the proponent ensure that community members receive keys to any new gates that may be erected on roads or trails they currently use to access spiritual use areas?
	Will community members continue to have the required level of privacy to carry out their spiritual activities during the construction and operational phases of the resort? Specifically, will the proponent design the resort in such a way as to avoid work crews and resort patrons traversing spiritual use areas?
	Will the viewscape, soundscape, and scentscape of the spiritual use areas remain unaltered during the construction and operational phases of the resort?
	Will the proponent ensure that resort activities do not negatively impact the quality of the water in the spiritual bathing pools?
Subalpine	Will the proponent ensure that the Subalpine Use Areas on the resort site are designated as off-limits to motorized vehicles?

Figure 5.12.   Conflict Analysis: STUP and a Diamond Exploration Project

RefID: 161
Date: 20/03/2008
Category: Industrial/Mineral Exploration/Diamond
Trigger: Mineral Exploration
Applicant: MEMPR
Proponent: Private/Company

Referral Example 5: Detail

S'ólh Téméxw
2008 Referrals
Cultural Landscape Feature
Culturally Sensitive Habitat
Subalpine
Sanctuary
Sensitive Waterway/Waterbody
Protected Watershed
Canyon Heritage Area

November 15, 2013
SCALE: 1:40,000
Projection/Datum: UTM Zone 10 NAD 83

Chapter 6.

Discussion

The goal of this research project was to analyze the referrals received by Stó:lō Nation to gain an understanding of the resource pressures on S'ólh Téméxw. The objectives underlying this goal were to identify: which activity sectors are generating the resource pressures; where on S'ólh Téméxw the activities are being proposed; and who is proposing to carry them out. While in the process of addressing these objectives, I uncovered some interesting aspects of referrals and of the referral process itself. This chapter highlights the results of my findings, discusses these aspects of referrals and the referral process, identifies the benefits of the analysis, and offers some recommendations for future work.

6.1. Pressure Points on S'ólh Téméxw

As can be seen from Figure 5.7, referrals are dispersed throughout S'ólh Téméxw. However, there are concentrations of referrals in and around lakes and rivers, indicating a high demand for the water resources of S'ólh Téméxw. Further investigation into the nature of these water-related referrals indicates that they come from run-of-the-river hydroelectricity projects that use water to generate electricity, flood mitigation initiatives that remove gravel from riverbeds, dredging activities intended to deepen the water column for boating purposes, and applications for private moorage licences. Although the forestry referrals were not digitized in the GIS, the pie chart in Figure 5.3 shows that the forestry resources of S'ólh Téméxw are also under particular pressure, with forestry-related referrals making up approximately a third of the industrial referrals. Figure 5.3 also indicates that aggregate and quarry referrals make up approximately eleven percent of the industrial referrals. Combining these explicit proposals to extract sand and gravel from S'ólh Téméxw with the gravel extracted from rivers under flood mitigation initiatives, which is then sold, indicates the extent of the pressure on the sand

and gravel resources of S'ólh Téméxw. While activities related to utilities only make up four percent of the referrals, it is important to note that the establishment of transmission lines is included in this count. While small in number, these referrals involve extensive linear structures that cut through environmentally and culturally sensitive areas of S'ólh Téméxw and the right of way associated with them negatively impacts the Stó:lō people's access to those areas.

Another noticeable geographic concentration of referrals is in and around urban and rural residential areas. The "Community/Institutional" referrals related to planning, infrastructure, and public safety activities typically aim to service communities that live in the FVRD and the GVRD. Table 5.12 shows that local governments generate almost a quarter of the referrals received by Stó:lō Nation, with Table 5.13 indicating that these local government referrals are evenly distributed between the FVRD and the GVRD.

Other proponent groups proposing to carry out activities on S'ólh Téméxw are the private and government sectors. Tables 5.12 and 5.13 show that private individuals and companies make up just over half of all referrals received, with companies generating approximately four times as many referrals as individuals. This greater pressure exerted by private companies is not surprising given the industrial nature of many of the proposed activities. Particularly noteworthy is the pressure that a single private company may exert on S'ólh Téméxw. Figure 5.9 shows the extent of the thirty-eight referrals generated by a single company. Tables 5.12 and 5.13 show that the government sector generates approximately one fifth of the referrals received by Stó:lō Nation, with the government of British Columbia being responsible for over ninety-five percent of those referrals. This distribution reflects the province's constitutional authority over land and resource use (Muldoon et al., 2009).

6.2. Challenges to Evaluating Referrals

While reading through each referral in order to find meaningful aggregate categories, I began to notice trends in the referrals that posed challenges to evaluating referrals and pointed to inadequacies in the policies employed by the government departments responsible for issuing referrals.

One such trend relates to the response time that government departments impose on the Aboriginal organizations that receive referrals. On average, Stó:lō Nation was given forty-five days to respond to each referral, with the clock starting from the date that the referral letter was issued. Referral letters typically remind the recipient that if they do not respond in time that government evaluation of the proposed activity will proceed. The forty-five day response window does not take into consideration the nature of the proposed activity. Some examples of referrals from this data set that had forty-five day response windows include: installing transmission lines, replacing an existing culvert on a road, extracting forty thousand cubic metres of gravel from a river, drilling boreholes to collect ore samples for mineral exploration, and quarrying over three hundred thousand cubic metres of aggregate from an open pit mine. Even this handful of examples has wide variability in terms of the natural resources used, location, complexity of the activity, and potential negative impacts on Stó:lō cultural resources. The forty-five day response window also does not take into consideration the number of referrals received by Stó:lō Nation during the same period. Staffing at the SRRMC does not increase with an increasing number of referrals.

Another trend I noticed was the absence of digital shapefiles in the referrals. Paper-based mapping was the standard used to convey geographic information about the footprint of the proposed activities in this referral data set. Including only paper-based maps in a referral pushes the task of digitizing the referral footprint onto the Aboriginal organization and, in doing so, increases their workload and the time it takes them to evaluate a referral. Unfortunately this was not the full extent of the problem with the paper-based maps provided. The accuracy and quality of the paper-based maps varied widely, with some referrals containing precise maps, others containing maps showing a lot of details but missing the necessary geographic coordinates, others containing maps with geographic coordinates but only the centroid of the referral footprint displayed, and still others showing hand-drawn delineations of the work area on print outs from mapping websites. Without precise geographic information about the footprint of a referral it is very difficult to understand the potential impacts it may have on Stó:lō cultural resources.

Both these trends pose challenges to processing referrals. These trends are indicative of a referral process that was developed without input from the very groups

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that receive and evaluate the referrals. These trends ignore the disparity in staffing on the government and the Aboriginal sides of the referral process.

6.3. Understanding Resource Pressures

Through my analysis, I discovered that the referrals received by Stó:lō Nation represent a range of interests that includes, but is not limited to, the extractive and profit-driven resource extraction proposals subsumed under the rubric of industrial interests. While "Industrial" referrals make up approximately half of the data set, almost a third of the referrals fall into the "Community/Institutional" category. As discussed in Chapter 4, "Community/Institutional" referrals represent uses of Crown land by local governments or registered charity or non-profit organizations for the purpose of providing a beneficial community service (BC FLNRO, 2011g).

At first glance, the "Community/Institutional" category of resource pressures may seem like a necessary and beneficial use of S'ólh Téméxw. However, the reality is more nuanced than that. Some of these referrals, such as those related to environmental management and recreation, should in theory provide services that have the potential to benefit both Stó:lō and non-Stó:lō communities. Other "Community/Institutional" referrals, such as municipal planning activities, are primarily geared towards providing services to non-Stó:lō communities (*Local Government Act*, 1996). Finally, "Community/Institutional" referrals for proposed flood management activities are complicated in terms of the benefits and negative impacts they create. While both Stó:lō and non-Stó:lō communities reside in areas that are susceptible to flooding and may therefore benefit from flood prevention efforts, these activities require gravel to be extracted from rivers which can cause destruction to juvenile salmon rearing habitats. In 2006, gravel extraction activities at one site exposed salmon nests and killed approximately 2.25 million young salmon (Pynn, 2013, p. A9). Such destruction negatively impacts a highly-valued Stó:lō cultural resource. It is important to understand this nuanced picture when evaluating the potential benefit of "Community/Institutional" referrals to Stó:lō communities.

6.4. Benefits of the Analysis

6.4.1. Connecting the Dots

The level of detail I recorded for each referral allowed me to establish connections between referrals that otherwise seemed unrelated. Figure 5.9 shows a map with thirty-eight referrals that came from the same company. As discussed in Section 5.2, without examining the British Columbia Registration Number associated with these referrals, I would not have made this connection. Bringing these referrals into a GIS further enhanced my understanding of the company's plans to develop multiple run-of-the-river hydroelectricity projects in a concentrated geographic area within S'ólh Téméxw. Equipped with this contextual information, an Aboriginal organization processing one of these referrals would be in a much stronger position to engage with the Crown or with the proponent to address issues such as revenue-sharing agreements and the proponent's strategic-level plans.

6.4.2. Identifying Impacts to the Stó:lō Cultural Landscape

Displaying Stó:lō cultural resources on the same map as the proposed activities provides a visual tool to assist in conflict analysis. The four examples of potential conflict shown in Section 5.4 demonstrates how useful this tool is for identifying the areas on S'ólh Téméxw where proposed activities have the potential to negatively impact Stó:lō cultural resources. The availability of such visual information assists referral staff, Stó:lō leaders, and Stó:lō community members in their efforts to protect these cultural resources. Successful protection of important cultural resources requires an ability to identify both the resources and the threats to them. The GIS tool tested in this research project fulfills this requirement.

6.4.3. Identifying Cumulative Effects

Every referral represents an activity being proposed on a landscape that is already under pressure from existing activities. Consideration of cumulative effects is an important step in fully understanding the potential negative impact a proposed activity

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may have on S'ólh Téméxw. My analysis of the referrals data set within a GIS allowed for the identification of possible cumulative effects by:

- Permitting searches on other proposed activities in the data set that lie within a set distance of the referral under consideration;
- Using the STUP to search on all proposed activities that may impact a geographic feature of interest to Stó:lō;
- Acting as a visual tool to facilitate the incorporation of local knowledge on existing activities in the vicinity of the referral under consideration; and
- Acting as a visual tool to identify communities or areas that may be indirectly impacted by the referral under consideration, such as a potential increase in truck traffic and air pollution due to the transport of gravel from a proposed mine through a reserve.

Having detailed information recorded about each referral in the GIS further enhances the analysis of these cumulative effects.

6.4.4. Identifying Triggers for Potential Future Activities

During my analysis I discovered that certain referrals have the potential to facilitate and create momentum for subsequent proposals. Mineral exploration referrals are a good example of this. A typical mineral exploration referral describes activities such as drilling boreholes and sampling from various sites across the mineral claim area. Working off this information alone, it is easy to imagine approving such as referral as the described activities will have minimal impact on the landscape. The concern with treating such a referral in this manner is that successful mineral exploration activities may lead to the development of mines. Mining activities are many orders of magnitude more harmful to the environment than mineral exploration activities. It is critical that Aboriginal organizations processing such mineral exploration referrals are aware of this connection and evaluate the referral based on both the activity it proposes to carry out and any future activities it has the potential to trigger. Displaying both the location of the boreholes and the entire mineral claim area on the same map provides a visualization of the footprint of the referral and the likely footprint of a future activity it may trigger.

6.4.5. Raising Awareness Among Stó:lō

Upon completion of my research project I sought out avenues through which I could communicate my results to the Stó:lō community at large. Under the guidance of Schaepe, I identified the following three Stó:lō groups to present my findings to:

- The Stó:lō Nation Chiefs Council (SNCC). The SNCC comprises chiefs, councilors, and representatives from the eleven Stó:lō bands that make up Stó:lō Nation. The SNCC coordinates the self-determination efforts of Stó:lō Nation and represents it in engagements with the Crown and other Aboriginal organizations (Stó:lō Nation, 2013);
- The SXTA Lands Working Group. The SXTA Lands Working Group comprises chiefs and councillors from the seven Stó:lō bands engaged in treaty negotiations (SXTA, 2014); and
- The S'ólh Téméxw Referrals Alliance (STRA). The STRA represents technical staff from Aboriginal groups throughout S'ólh Téméxw who meet on a regular basis to discuss referrals.

I received positive feedback from the audience at each of these presentations. The visualization provided by the GIS, along with the information I recorded on each referral, facilitated conversations pertaining to the nature of referrals and their potential negative impact on S'ólh Téméxw.

6.4.6. Building Confidence Internally

My research project provided insight into a way of framing-up and classifying referrals that generated an aggregate view of resource pressures on S'ólh Téméxw. Setting up and testing the categorization framework and GIS tool generated a sense of accomplishment and progress within the SRRMC. The experience of running this pilot project provided empirical support for the development of Stó:lō Connect, a web-based social networking tool for the management of referrals within S'ólh Téméxw (Morrison, 2013; Stó:lō Connect, 2014).

6.4.7. Demonstrating Capacity Externally

This research project provided proof to the government of British Columbia that the SRRMC had the capacity to conduct this level of referral analysis. This proof of capacity was used during negotiations with the province that lead to the establishment of

a SEA Pilot in 2012 (Stó:lō First Nations and the Province of British Columbia, 2012; D. Schaepe, personal communication, November 28, 2013).

6.5. Implications of the Analysis

6.5.1. On Economic Development

Presenting a large amount of critical information related to referrals in an easily digestible, visual format provides referral reviewers with the ability to explore the full extent of the potential negative impacts associated with the proposed activities. Asking more nuanced questions during the referral review process will cause the initial dialogue to be deeper and more detailed. Such an increase in meaningful engagement may have the effect of slowing down economic development, as it will take longer for decisions to be made and licenses to be granted. However, the end result should be better-designed projects, as the proposed activities that receive approval will have balanced their economic interests with their responsibility towards the Aboriginal people whose land and resources will be used by these activities.

The inclusion of the STUP spatial data in the GIS-based referral processing system should also help improve certainty for proponents. As mentioned in Section 3.5, the STUP serves the dual purpose of delineating the areas throughout S'ólh Téméxw that require protection while identifying the other areas that may be open to economic development opportunities. Having this information available during the referral review process reduces the risk that objections will be raised on the grounds of Aboriginal rights infringements when the proposed activity is already underway. Risk reduction is attractive to developers because it creates a more certain investment environment. The manner in which the STUP was designed, as a spatial dataset with supporting policy documentation, makes it possible for proponents to incorporate it into their strategic-level planning, thereby further reducing their investment risk by minimizing the likelihood that their proposed activities will be rejected at the referral review stage.

6.5.2.   On Community Development

Many Stó:lō communities have carried out visioning exercises and participated in land use planning activities in order to build an understanding of how they want their communities to grow in the future with considerations given to the health, economic, education, employment, housing, cultural, and recreation needs of their members. The availability of an aggregate picture of the resource pressures in their locality and throughout S'ólh Téméxw has the potential to assist Stó:lō communities in their community development planning initiatives.

The GIS-based referral analysis system tested in this research project has the potential to evaluate how well proposed activities align with Stó:lō community development plans. By loading the spatial data associated with Stó:lō community development plans into the system, a potential conflict analysis could be carried out in a manner similar to that run on the Stó:lō cultural resources spatial data. For Stó:lō communities who do not have spatial data associated with their community development plans, the system could still be used as a visualization tool to help facilitate discussions regarding the appropriateness of proposed activities given the needs of their communities.

The availability of an aggregate picture of the resource pressures on S'ólh Téméxw may also allow Stó:lō communities to identify economic development and partnership opportunities that could benefit their communities. Stó:lō communities planning cultural tourism initiatives, for example, may benefit from being able to identify the location and extent of proposed holiday residences that might contribute to their client base or the nature of the work being carried out by provincial environmental monitoring programs to ensure that it would not interfere with their planned cultural tourism activities. Being able to identify the impact that a company or a particular industry is having in their locality may also strengthen the position of a Stó:lō community entering into negotiations with a proponent or the government to secure job opportunities for their members or revenue-sharing agreements that can be used to financially support their community development initiatives.

6.5.3.   On the Future of Referrals Management

My research project demonstrated the feasibility and utility of a landscape-level GIS-based approach to referrals management.   Through my analysis I identified two opportunities to streamline the administrative process associated with managing referrals: the pertinent information I recorded for each referral could be used to create a summary information checklist to request from future proponents, removing the need for staff to dedicate time to extracting the information from the referrals; and requiring a shapefile with each referral submission would allow for a rapid review of the potential negative impacts associated with a referral.   Implementing both of these streamlining processes would generate efficiencies in the management of referrals.

The inclusion of the STUP spatial data in the GIS allows an in-house analysis of the areas of potential conflict between a proposed activity and Stó:lō cultural resources to be carried out. While this information is essential for staff processing the referrals, it is not essential that they perform the potential conflict analysis. The power of a GIS makes it possible to shift the burden of this analysis onto the proponent. By making the STUP spatial data available to proponents they would be able to run a potential conflict analysis before submitting their referral. A requirement of referral submission could then be to include a "Stó:lō cultural resources conflict analysis report" which outlines all areas of conflict along with suggested mitigation strategies or management plans developed and proposed by the proponent. This burden shift would reflect the importance of Stó:lō cultural resources making them a central consideration for any activity proposed on S'ólh Téméxw.   This burden shift would also reduce the pressure on in-house technical resources.

6.6. Recommendations

While working with the referral data set I gained an understanding of the referral process and, in particular, of its shortcomings as a framework for consultation with Aboriginal organizations.   Based on my experience, I suggest the following recommendations to improve the process by lessening the burden it places on Aboriginal organizations:

- Referrals have a lot of variables including the nature and location of the proposed work and its proximity to Stó:lō cultural resources. The typical forty-five day response time requested by the Crown is ill suited to such variability. I recommend response times be set by consensus between the SRRMC and the Crown following an initial referral review by the SRRMC.

- It is impossible to accurately evaluate the impact a proposed activity may have on S'ólh Téméxw if the footprint of the activity is not provided. Proponents should be required to provide a digital shapefile for the activity footprint. If a proponent does not work in a GIS, they should be required to provide a technically accurate paper-based map to the SRRMC for digitization.

- Referrals are complex in nature. The Crown has a suite of ministries that administer natural resource use in British Columbia. Each ministry has teams of experts at its disposal to process applications from proponents who wish to use provincial natural resources. Processing all the proponent applications that fall within S'ólh Téméxw require multiple Crown ministries, yet all the referrals triggered by these applications end up at the SRRMC to be processed by a small group of people. This group of people already has expertise in the fields of archaeology, cultural heritage management, geographic information systems, land use planning, and fisheries. Adding to this expertise would improve the SRRMC's capacity to deal with the inherent complexity of referrals. I would recommend the following additions to staffing: a registered professional biologist, a registered professional forester, a registered professional geoscientist, a registered professional agrologist, and an individual experienced in environmental assessment at both the federal and provincial level. Given the burden that referrals place on Aboriginal organizations, I believe it is the responsibility of the Crown to fund such capacity building.

- The patchwork of legislative and policy tools that regulate natural resource use in British Columbia is a daunting landscape to navigate. The Crown should submit a "primer" as an attachment to each referral. The "primer" should include: a list of all the legislation and policies, including "best practices," triggered by the proponent's proposed activity; a guide to the sections in the legislation and policies that detail the environmental protection efforts required of the proponent; and an explanation of how the license approval and renewal process operates, including all other assessments the proponent may be required by the Crown to undertake.

- The SRRMC should not have to dedicate its limited resources piecing together a picture of the pressure a proponent puts on S'ólh Téméxw. Proponents should submit a "proponent profile" as an attachment to their referral. The "proponent profile" should include: contact information; details of any parent company or subsidiaries; a list of current licenses, including details on the nature of the activities conducted under each license and shapefiles showing the footprint of the activities; notification of any future plans to carry out other work on S'ólh Téméxw; and a record of any license violations. Having a "proponent profile" requirement would put the onus on the proponent to be transparent about the full extent of their activity on S'ólh Téméxw. The SRRMC could add its own notes to a "proponent profile," indicating how well

the proponent engages with the SRRMC and highlighting any negative or particularly positive experiences. Establishing such a practice in-house would ensure that valuable information about the SRRMC's experience with a proponent is not lost in the event of staffing changes. Maintaining a corporate memory of proponent engagement is an important part of managing relationships with proponents that do business on S'ólh Téméxw.

- While some impacts from activities are obvious (e.g., noise from a mine), other impacts are not readily detectable (e.g., a decline in water quality). Baseline data should be collected before a project begins. I believe it is the responsibility of the proponent to fund the collection of such data if it is unavailable from the Crown as part of regular environmental monitoring. The baseline data should include measurements on indicators important to Stó:lō (e.g., indigenous plant species used for cultural purposes). Monitoring should occur during and at the end of the project to ensure that the indicator levels remain within ranges deemed acceptable by Stó:lō.

Implementing these recommendations would help to simplify the task of referral analysis by placing the onus on both proponents and the government to ensure that every referral is as complete and straightforward as possible to make the referral process transparent.

6.7. Conclusion

Prior to this research project the SRRMC had a paper-based, in-house system for referrals management that processed each referral individually. Every paper referral was disassociated from every other paper referral making it impossible to conceptualize the meaning of the aggregate picture of the resource pressures on S'ólh Téméxw. By categorizing the referrals and embedding them in a GIS, this research project brought into view the big picture of the resource pressures on S'ólh Téméxw.

The categorization process uncovered major pressures on the water, forestry, and gravel resources of S'ólh Téméxw. The GIS demonstrated the geographic range of the proposed activities and permitted the identification of referral clusters in and around bodies of water and populated areas. Proponent group analysis identified the private sector as generating the greatest number of referrals, followed by local government and the provincial government.

The landscape-level view of referrals resulting from this research project improves the Stó:lō people's ability to manage their land and resources and therefore contributes to their ability to exercise their Aboriginal right of self-government. By identifying threats to cultural resources while they are still only threats, there is an opportunity for dialogue and mitigation. The categorization and visualization techniques tested in this research project present an opportunity to improve the protection of cultural resources.

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